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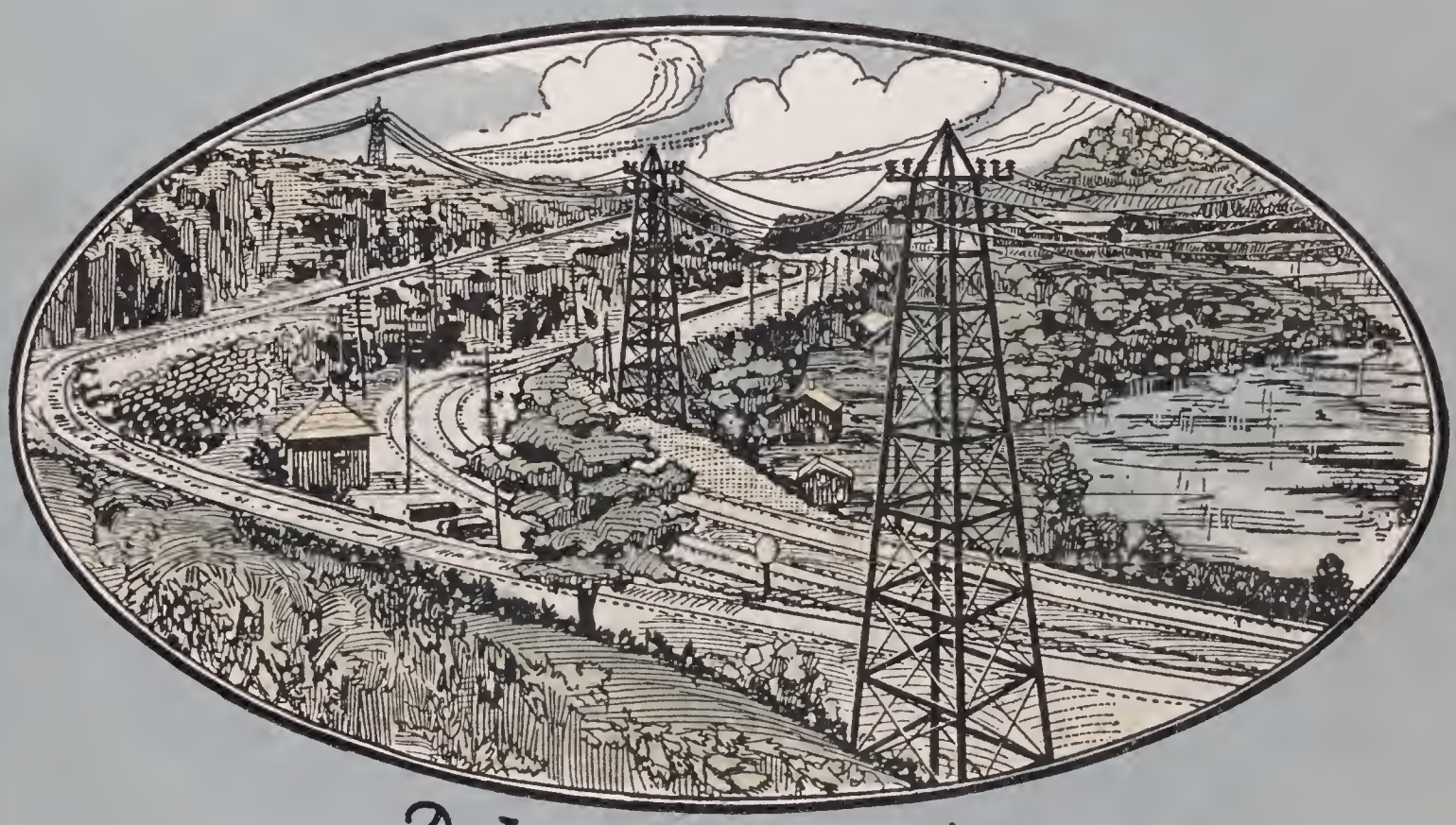
The Upper Mohawk Valley



A Land of Industry

Utica Gas & Electric Company

UTICA, N. Y.

The

UPPER MOHAWK VALLEY

A Land of Industry

AN OUTLINE of the present commercial conditions and a presentation of the future industrial possibilities of that part of the Empire State which is commonly known as the "Gateway of the West." Compiled and arranged by members of the staff of the publishers and illustrated with maps, charts and photographs collected from authoritative sources. Dedicated to the people of the Upper Mohawk Valley and presented to all who are interested in the commercial development of the United States.

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UTICA GAS & ELECTRIC COMPANY

UTICA, NEW YORK

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If some of the pioneer merchants of Utica, those who first moved their places of business south of the Erie Canal, could come back and see Genesee Street at night, as the camera pictures it here for us, it would seem to them a fairy land with its squares of modern stores and shops, its rapidly moving electric cars, the hundreds of automobiles on its pavements, the hundreds of people on its walks—and the thousands of shining lights. As we of today pass along this brilliantly lighted thoroughfare, we forget that the lights stand a perpetual sign of power, a harnessed force that permits us to live better, work better and play better than any generation of the past and perhaps equal to any of the future. As you look at this picture of a busy and modern city, let your mind turn back Time's passage a hundred years and then twenty-five. Imagine these buildings as they must have been then, dim, square log structures with a few frame houses scattered along; the lights, nothing save a gleam here and there from some village dweller's candle; the street empty save an occasional ox-cart or farm wagon; the few people dressed in their homespuns and leather; an ancient town, in the main made up of quaint people, with equally quaint customs, but wherewithal with a vision of greater things in the future. That is Utica of that time. A frontier town, picturesque and thriving. Does not the very force of contrast cause you to comprehend the progress made possible by this thing called electricity and the great step forward which civilization has taken through its use?

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Opening the Gateway

ON DECEMBER 11, 1634, Arent Van Curler, superintendent of the Colonie Rensselaerswyck, left Fort Orange, located where the city of Albany now stands, and started on the first journey of record up the Mohawk Valley. A few years afterwards he wrote to Killian van Rensselaer, the patroon at Amsterdam, Holland, that "a half day's journey from the Colonie, on the Mohawk River, there lies the most beautiful land that the eye of man ever beheld."

On December 15, 1922, one of the daily newspapers of Utica, New York, under the head of "An Outsider's Opinion," printed the following editorial:

"Roger W. Babson gave Utica and the people of Central New York something to think about when he told the Chamber of Commerce luncheon yesterday that the Mohawk Valley is destined to become the manufacturing center of the United States. It is frequently helpful to see ourselves as others see us; and, when an outsider's opinion covers such a range of possibilities as is conveyed in Mr. Babson's statement, it becomes the more significant.

"Living in Massachusetts, he has no particular reason for boosting the Mohawk Valley, more especially in view of the fact that his activities take him into all parts of the United States and make him dependent upon national rather than local conditions. He made the statement without qualification; and, while he did not go into the reasons for his opinion, he was willing to let it be taken at its face value. There are plenty of reasons that might be assembled to support the statement. Transportation, accessibility to markets, millions of consumers within comparatively short distance, plenty of power available and more in prospect—these are only a few of the essentials for industrial supremacy that the Mohawk Valley now affords. The people of this valley will be glad to know that it looks good to an outsider. Sometimes the 'familiarity breeds contempt' idea becomes all too general, and it is encouraging to know that a man who has seen as much as he has is willing to assume responsibility for a prophecy of such promise."

To appreciate the truth of these remarks and why the Mohawk Valley will become the greatest manufacturing center of the United States, let us go back to Arent Van Curler and the history of the valley. It were better, if we are to see this valley of industry as it is today and understand its future possibilities, that we go still further back to Henry Hudson, who, making his third attempt at the instance of the Dutch East India Company to find a passage to China, sailed up the river which now bears his name, in September, 1609. If Van Curler could stand today upon the trail he blazed in 1634 he would realize that he had discovered the "Gateway of the West"; and, if Hudson could again sail the Half Moon up the North River, he would be forced to acknowledge he had unknowingly found the short passage to China.

In 1614 the Dutch built Fort Nassau on what is now known as Rensselaer Island and ten years later eighteen families of Walloons built Fort Orange and established their permanent home in the New World. This was the next settlement in the colonies, after Jamestown, Virginia, which was founded in 1607.

In 1629 the Dutch Government granted Killian van Rensselaer, a merchant at Amsterdam, a tract of land of twenty-four square miles, with Fort Orange as the center. Arent

The home shown in the picture was built by Sir William Johnson at Fort Johnson, New York, in 1742, and is standing today. The Mohawk Valley has hundreds of old historic spots which tell the story of what it cost to make this a nation

Little Falls is called the "Rock City." Fifteen thousand people live in this beautiful location at the "Gateway of the West." Thru this natural gate civilization marched westward. The gorge which the Mohawk River cut through a spur of the Adirondack Mountains at this point discloses crystalline rocks belonging to the Laurentian formation, the oldest in the world

Van Curler was the patroon's or feudal owner's superintendent and the manor was called Rensselaerswyck. The village was called Beverwyck until 1644, when New Netherlands was transferred to the English; then the name was changed to Albany, one of the titles of James, Duke of York, and Albany it is today.

Arent Van Curler (every time his name appears in history it has a slightly different spelling) seems to have grown tired superintending a manor under a patroon system and his heart and mind were ever turning toward "the beautiful land," so, one day in 1662, "Corlaer," as his friends, the Indians, called him, marched out of Albany with a party of fourteen men, traveled afoot along the Indian trail to the place the leader had selected for their new home.

The "Gateway of the West" has been moved several miles toward the setting sun, and where this first settlement was founded now dwell ninety thousand people in the city of Schenectady.

Take your histories and turn to the seventeenth century and you will find that it was one of wars. All Europe at war; one nation against another and one combination or league of nations against another combination or league. This is not a history of nations, nor a history of wars, but an outline of a history of industry, and so wars will only be mentioned where they necessarily complement the history of industry we wish to outline.

One war after another was fought over the lower Rhineland, the home of the Palatines. Thousands of these people, of whom one historian wrote as "the most civilized and polite of any in Germany, extremely open and hospitable to strangers, and generally well informed," were driven from their homes and took refuge in England.

Anne was queen of Great Britain when these Palatines arrived in London in the early part of the eighteenth century. To tell how thousands of these people thronged the streets of the British capital, how they were lodged in warehouses, how buildings had to be erected for their shelter and how they were sent to New York would make a book in itself. Three thousand and more were brought to the colony in 1710 and settled on tracts of land on both sides of the Hudson south of Albany.

Before the first large body of Palatines left England it was the intention of the Crown to locate them about the junction of the Mohawk River and Schoharie Creek. This body was in personal charge of Governor Hunter and he saw fit to over-rule the orders of those in authority and use his own judgment where to place these dependents.

The Palatines were greatly dissatisfied with their locations on the Hudson and insisted upon going to the Schoharie Valley; so, without permission of the authorities, some forty or fifty families left the settlements on the Hudson and, with the sanction of the Indians, located in the Schoharie.

Governor Burnet came out from England in 1720 and on July 9, 1722, purchased a tract of land, which became known as Burnetsfield patent, from the Indians. This land, which extended from East Canada Creek to

West Canada Creek, was settled by Palatines in a short period from the time of purchase. Some of these pioneers undoubtedly came from The Palatine by way of Holland and arrived in New York in 1722, while others came from the settlements on the Hudson. Most of these people located on the Mohawk Flats or in the immediate vicinity. The "Gateway of the West" had moved forty miles nearer to the Pacific by 1730 and here it remains today; for the city of Little Falls and the villages of Herkimer and Ilion now stand where these forerunners of industry located two hundred years ago, and the cities of Utica and Rome are only a few miles farther to the West.

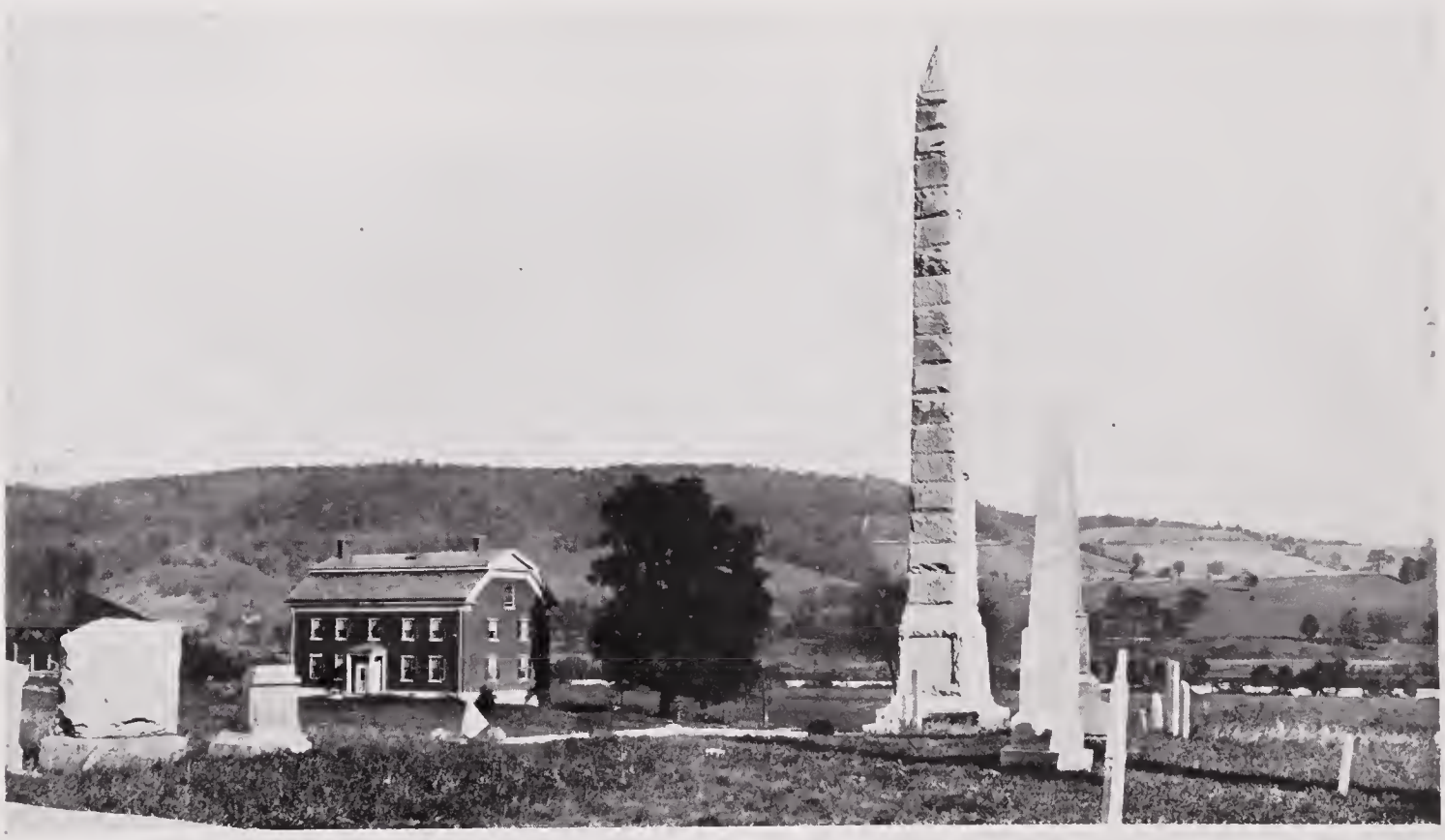
The historic part that this valley played in the making of the nation is ably set forth in the memorial presented in the New York Legislature on February 14, 1923, and the story as given here is from the Utica Observer-Dispatch:

"When Hugh White settled at White's Town in the county of Montgomery, his settlement marked the commencement of an epoch in our state history as distinct in its relation to the past one hundred and thirty-seven years of New England influence as the three hundred years of Dutch settlement, impressed upon us from the Hudson Valley, or the two hundred years Palatine settlement in the Valley of the Mohawk. His settlement marked the beginning of a migration, whose descendants, now in the fourth and fifth generations, are represented in families of vigorous mentality and action, residing not only in New York, but in all parts of the Mississippi basin and beyond the Rockies, whose memories turn to the days of pioneering in New York State and their earlier Colonial and Revolutionary homes.

"At the close of the eight years of the Revolution, Britain continued to hold Canada, while the 'West' passed to those states which as Colonies had received charters with 'ocean-to-ocean' grants. These states, subject to some reservations, ceded their interests in this area to the Union, until in 1787 it became the Northwest Territory, to be later carved into states and added to the federation.

"The embittered struggle commenced in Colonial times between Massachusetts, Connecticut, Pennsylvania, Virginia and George III. for the Ohio and Mississippi basin lands, in which Sir William Johnson, at the treaty of Fort Stanwix, in 1768, protected the lands of the Six Nations from any encroachment by establishing the line of property east of their possessions from Fort Bull, now Rome, to the Unadilla, to the Susquehanna, to the Pennsylvania line, thence westerly to the Alleghany,

The old homestead of General Herkimer who led his neighbors of the Mohawk Valley against the British and their Indian allies at the Battle of Oriskany during the Revolutionary War. Congress, a few years after the war, resolved that a monument should be erected to the memory of Herkimer and his neighbors, but it was over one hundred years afterward that the shaft in the foreground was placed in what is now a historic park. The old homestead is to be preserved as a museum



to the Ohio and to the Mississippi rivers; and secured the advantages in these negotiations for his Sovereign as against the Colonies by taking the Indians' title to the area which lay to the east of this property line in the name of George III. This transaction was a primary cause of the Revolution, and led New York, in 1786, to adjust her conflicting claims with Massachusetts and in 1878 to dramatically extend the lines of Montgomery County around the 16,000,000 acres of the Six Nations, and immediately erect this vast area into the town of White's Town. By this act she established her present boundaries, doubled the previous area of her possessions and gave notice to the Indians that there was no Sir William Johnson to further postpone the settlement of the lands.

"The town was called after Hugh White of Middletown, Connecticut, who, with his five sons, on June 5, 1784, had taken possession of his interest in a patent which he and others had purchased at public sale in the attainder for treason of Hugh Wallace.

"Less than two hundred white inhabitants were to be found in White's Town when it was established in 1788, and this count included traders and prospectors. In 1786 there were seven homes at Hugh White's settlement, five at Rome, three at Oriskany, three at Utica and three at Westmoreland—all log cabins, small and cheaply constructed. In the common language of those in New England who had children or friends who went to settle there, 'they had gone way up among the Indians in the White's Town country.'

"The act creating the town of White's Town placed a north and south line running from the St. Lawrence River, east of the home of William Cunningham, at what is now Baggs Square, in Utica, to the Indian property line on the east line of the town of Otsego, which was the Unadilla River; thence on the property line to the Pennsylvania line, as the westerly boundary of the town.

"By 1820 the population of the state, estimated at the close of the Revolution to be approximately one hundred and ninety thousand, had increased to one million and forty thousand, of which it is estimated that one million were from New England. By 1841 White's Town's original limits were carved into thirty counties, since which no changes have been made."

Five hundred thousand people now live in the Mohawk Valley and nearly three millions of people live in what was once White's Town.

Every foot of the Mohawk Valley from Rome to Schenectady is historic soil; every turn in the road and every bend in the river brings one face to face with scenes which vividly recall the daring and valor of the men and the indomitable courage of the women who long ago fought on and on against almost overwhelming odds and suffered untold hardships to lay the foundations of this nation.

Outposts of civilization, these settlements of the Mohawk Valley suffered from massacre after massacre and war after war. Villages were destroyed; homes were burned; families murdered; communities were wiped out, and yet these people held on. How they worked! How they succeeded! Only to have the work destroyed. How they started anew to build to greater success should be told to every child in the Mohawk Valley; and how they paid for their success through hard toil should be a part of the educational plan of every school. It should be told to every man and every woman who comes to this country from beyond the seas, for when they come to understand how we came to be a nation they will appreciate what a privilege it is to be an American.

Interior Old Fort Herkimer Church, with its high pulpit. It was in such picturesque places that the old pioneer took his family to worship on Sunday. A three-hour sermon was not considered of undue length in those days. From such a vantage point the drowsy listener was easily spied out and an elder with his long staff brought back a fleeting consciousness with a light but lusty tap. Note the old oil lamps that were their only source of artificial light. These old churches also served as forts in times of stress

Visit a community for the first time and you will undoubtedly be shown the old historic spots and landmarks. The Upper Mohawk Valley has more than its quota of these homes of men who founded the nation. The first picture is Fort Van Alystine, built in 1750, at Canajoharie, while the second is the Glen Sanders house at Scotia built in 1713. The next is the old block house at Johnstown built in 1763, and number four, Old Free House at Fort Plain, erected in 1739. Number five is the Old Ehle House at Fort Plain, dating from 1752, while number six is Old Fort Block, built at St. Johnsville in 1750. Number seven is the Gort Wagner house, 1738, and the last is Sir William Johnson's house, Johnstown. One is apt to forget the price paid by these early pioneers in the coin of hardship, danger, discomfort and toil, for the right to live their own life, worship their own God; and, though they little realized it, thus laid the foundation of the greatest nation on earth

In war-time or peace-time The Savage Arms Company has made a name for itself through the intrinsic worth of the product. This mammoth plant covers more than thirteen acres and contains seven hundred thousand square feet of floor space. During the war it was given over entirely to the manufacture of war machinery, especially the Lewis gun. Wherever firearms are known, the name of Savage is respected. Sportsmen have come to know that the Savage arm is dependable

Hasselbarth-Whiton Company manufactures a line of brass and iron beds, cribs and springs. The industries of the Mohawk Valley, diversified as they are and calling for such a wide range of craftsmanship, make this section a doubly secure region for the employer and employee because of two things: Securing to the employer a low labor turnover and, to the worker, a steady job. These two facts will prove of interest to manufacturers studying the subject of factory location

The Utica Heater Company of Utica is among the largest manufacturers of heating equipment in the United States. Its product is used extensively both in this country and abroad. Manufacturing conditions, transportation, and abundant electric power have enabled this concern to take its place among the foremost of the nation. These same qualifications will cause the Valley of the Mohawk to take rank as the nation's greatest industrial center

The Manufacturing Center of the United States

HERE are several reasons why the Mohawk Valley will become the great industrial center of the United States, but it is only when you take these several reasons and place them together in a complete composite that one can see on what an excellent foundation rests the claim of future commercial dominancy.

The Mohawk Valley will become a great industrial center because it is now an industrial eenter and because it possesses in an unusual degree all the essentials necessary to the economical production of a very extensive range of the common necessities of life. It will become the great industrial center because profit in the business world today is not a matter of reckoning in dollars, but is the result of estimating in fractions of the cent and because the business executives of this nation are rapidly learning to audit the future with even greater care than they now audit the past.

The Mohawk Valley will become a great industrial center because it holds forth the same advantages to the manufacturer employing fifty men, to the manufacturer who of a necessity seeks a market in a limited territory, as it does to the great manufacturing organization, counting its employees by the thousands and whose market covers the nation or is even world-wide.

There was a time when manufacturing plants were located practically by accident, but modern business conditions force the industrial executive to carefully consider all the elements necessary to his success, chart the possibilities and locate his plant through design.

First let us look at the Mohawk Valley from the viewpoint of geographical location. The historic Mohawk Valley starts at Rome, New York, and runs east to Schenectady in the same state, a distance of some one hundred and sixteen miles. The Upper Mohawk Valley, the industrial district of which we are writing, extends from the city of Rome to the city of Little Falls, a distance of thirty-five miles, and in this district are the cities of Rome, Utica and Little Falls, as well as Frankfort, Ilion, Herkimer, Whitesboro and other villages which contain one or more large manufacturing enterprises.

If you will look at your map of New York State you will see why Utica, the largest city of the district, is called the "Heart of New York State." It is ninety-five miles from Utica to Albany, two hundred and thirty-six miles to New York City, two hundred and two miles to Buffalo, one hundred miles to the state line on the south and one hundred and ten miles to the St. Lawrence River on the north.

Please remember these figures of distance as you will find it is necessary for us to return to them as the discussion advances.

There are over ten millions of people living in New York State and it can well be considered an empire. There are over ten millions more people within a day's journey of Utica. But geographical location alone, or geographical location coupled with population, does not make it possible for us to claim that the Upper Mohawk Valley will become the great industrial center of the United States.

There is something more, a great deal more, on which to base this claim. If you will stand at a given spot on the outskirts of the city of Little Falls, look toward the East,

Lock No. 17 on the State Barge Canal at Little Falls is the highest lift lock in the world

you will see a narrow ravine which the Mohawk River cut through a spur of the Adirondack Mountains and the gap thus formed can truthfully be called the "Gateway of the West," for through this gap and ravine runs the New York Central, the only water level road between the East and the West.

Take this subject up with your traffic manager and he will tell you that the New York Central Lines enter twelve states and directly serve territory containing fifty per cent of the population of the United States. He will tell you that this line carries fifty-two per cent of the passenger traffic between New York and Chicago, while five other lines carry the remaining forty-eight per cent.

As you stand at Little Falls you will see another railroad passing through the gap. This is the New York, West Shore and Buffalo Railroad which passes through the Upper Mohawk Valley, and which runs from Buffalo to New York City. This road, while controlled by the New York Central Lines, is operated separately and should be considered as another organization when the shipping facilities of this industrial district are being tabulated. So from east to west the Upper Mohawk Valley equals any other industrial district in railway service.

Now let us see how it checks from north to south. The Delaware, Lackawanna and Western Railroad, or the "Lackawanna," as it is commonly called, is one of the lines south from the Upper Mohawk Valley. This railroad was originally called the Utica, Chenango and Susquehanna Valley Railroad, as it was built to bring coal to Utica from the Pennsylvania coal fields. Not only does the Lackawanna furnish the Upper Mohawk Valley with a direct line south into Pennsylvania, connecting with other roads to the southern states and west and southwest, but it also furnishes another direct route to New York City and the Central Eastern States. It is certain that the executives of this transportation company which broadcasts the slogan "Mile for mile the most highly developed railroad in America" will always maintain both a freight and passenger service equal to the demand.

The New York, Ontario and Western Railway is another system which operates from Utica and the Upper Mohawk Valley and which taps the Pennsylvania coal fields, connects with railroads for the south and west and which also has a terminal in New York City.

The principal cities and towns of northern New York State are served through the railways which serve Utica and there is no shorter way from any other manufacturing center of the United States to Montreal, the center of Canadian commerce and the Dominion's greatest port. Shipments into Western Canada via one of the greatest transcontinental roads from Montreal can thus be made over practically a direct route from the Upper Mohawk Valley.

The Rome, Watertown and Ogdensburg Railroad, operated by the New York Central through the Ontario and the St. Lawrence Division, furnishes a route to the northern cities and towns of the state, while the Mohawk and Malone Division is the one direct route north to the Adirondacks and to Ottawa and Montreal.

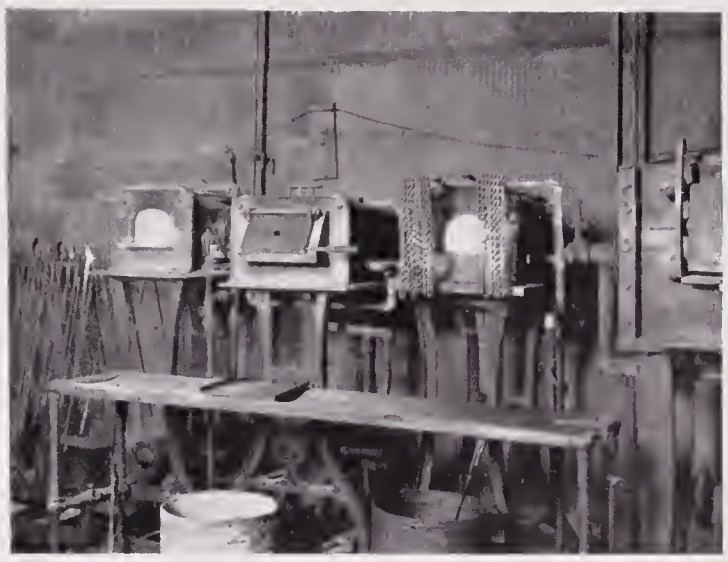
The shipping facilities of the Upper Mohawk Valley are not confined to the railroads. Standing by the ravine at Little Falls you will see two other highways leading through the gap. One of these is the New York State Barge Canal and the other is the famous State Road.

Before the Revolutionary War the Mohawk River was navigated by bateaux of light draught and easy transport over the carrying place at the lesser falls. In 1795 a navigation company built a canal and locks at Little Falls and a lock near Fort Herkimer so as to avoid the rapids and falls.

On October 26, 1825, there started from Buffalo, New York, two canal boats, one called the Seneca Chief and the other the Young Lion of the West. These boats carried the men closely connected with the building of the Erie Canal on the first complete trip by water from the Great Lakes to the Hudson and by 1826 the canal was a thoroughfare and in general use.

If we could turn from this discussion of cold business facts and enter into the story and romance of business, we know of no better place than here. A book, or a series of books, could be written on this man-made waterway which played so large a part in the building of a nation and which helped to make New York the Empire State.

The Erie Canal has grown into the Barge Canal of today which follows practically the same route the greater part of the way from



Type of high-speed gas furnaces in use by The Savage Arms Corp. This style is used to heat soldering irons, nuts, bolts and such small pieces where speed is essential. The list of industrial uses to which gas is being put grows larger each year. New processes and new treatments of metal are bringing forward new machinery requiring industrial gas. The demand is causing producers to enlarge their equipment to meet this need

Assembly Department of the Remington Cash Register, Ilion. The cash register has taken the place of the old wooden cash drawer even in the deepest rural communities, and a large percentage of those in use are made by Remington. So efficient and necessary are these machines that present day stores would as soon be without a stock of goods as to be minus a cash register

A bird's-eye view in the knitting room of the Utica Knitting Company, Utica. Every machine you see is electrically driven. The miles and miles of knitting thread used here in the course of a year is almost unbelievable. This concern operates thirty-three thousand spindles and employs over three thousand persons. It requires a high degree of skill in the operation of this machinery

The beater room of the Litchfield Paper Company, Frankfort. These giant machines that knead the pulp which later becomes paper owe their motive force to electricity. The hornet knew the art of paper making, also the value of organization. This Mohawk Valley organization demonstrates how well men have learned the hornet's lesson

View in forging department of the Utica Cutlery Company. Perhaps your pocket or pen knife passed through this department. Note the modern overhead chain-driven equipment

Showing the sole stitching machines of the Dolgeville Felt Shoe Company. If you look closely you can see the finished product in the racks on the right. These shoes have found their way into many American homes

The Utica Willowvale Bleachery of Willowvale, N. Y. These manufacturers realize that to get maximum efficiency they must surround the workers with everything conducive to health and that sufficient recreation and amusement out of working hours is essential. To that end they have established The Willowvale Club and other social centers for their employees. This, together with good homes and living conditions, can have but one result: good work through goodwill

Buffalo to Albany. It was turned over to the Federal Government during the war, but, since its return to the state, and operated for the general interests of the public, the traffic has constantly increased.

The New York State Barge Canal System will prove a valuable transportation asset to this district and to the commonwealth.

Most economists, those men who have given the subject a great deal of thought based on sound business investigation, believe that it will play a very important part in the carrying of certain classifications of bulk freight and that it will be used far more extensively during the coming years than its sponsors ever contemplated.

New York has improved highways. They reach in every direction throughout the entire state and connect with the great trunk roads which are being built across the country. The automotive vehicle has been in use for a little over twenty years and the moving of freight by motor truck, even the short haul, is still in its infancy. Practically every business man using motor trucks in his industry has his own data as to their transportation value as applied to his individual business, but there is no general data on this subject. There is, however, this one certainty: automotive vehicles have a much larger field of usefulness in the communities where there is a good roads system covering hundreds of miles than in the sections of the country where roads are unimproved and built hit-or-miss, starting nowhere and leading to no place in particular. The connected, improved roads system of New York State is also a transportation asset to the Upper Mohawk Valley and the one great East and West highway follows the same lines as the trail of the Indians and the early settlers through the "Gateway of the West."

The Upper Mohawk Valley, then, has the first three essentials: geographical location, accessibility to communities with large purchasing power, and unequalled transportation facilities through railways, waterways and highways.

There is another essential, or rather a group of closely associated essentials, which the Upper Mohawk Valley possesses beyond any other developed industrial section of this country.

There are two thousand nine hundred and sixty square miles of land in Oneida and Herkimer, the two counties which contain the Upper Mohawk Valley, and some two hundred thousand people now dwell in these counties. It is thirty-five miles by railway from Rome to Little Falls, and, if the part of this district which borders on the railways and waterway were formed into a metropolitan area, filled with factories and the homes of the workers, there could be two millions of people housed without the necessity of congestion which is now common to many large industrial centers.

Every now and then a manufacturing organization opens up in a small way in one of the large, crowded-to-the-limit industrial

centers and in a comparatively short time, through the merit of the product and the sound business policy of the house, the company has grown away beyond the expectations of the founders. This is what we call locating by accident, for in all probability the man who conceived the business and the men who financed it never gave a thought to future growth and so started production in the city where the founders lived. In time the business must have larger quarters, a building or buildings designed for the proper manufacturing of their special product. Land values in the vicinity of their plant are found to be practically prohibitive. Since they became interested in a business of their own the heads of this concern have learned much about production costs and have found that floor space goes into the overhead just as much if owned by the manufacturer as if leased from others.

To increase floor space cost to meet the land value figures of the congested community would cut into a unit profit, not any too large as it stands, and to increase the selling price of the product to dealers or consumers would cut down the output. There is but one logical action for the heads of an organization thus placed to take: that is, to remove to an industrial center having all the other necessary essentials where land values are not exorbitant and so reduce the housing overhead.

There are hundreds of manufacturers in this country, north of the Mason and Dixie Line and east of the Mississippi, who are face to face today with just the condition mentioned. It may be you are one of them. If you will allow us to suggest that you come to Utica and check up all the essentials, we feel sure you will find it will pay you to do so and that you will find locating in this territory the best solution to your manufacturing problems.

There are other manufacturing concerns who do not intend to move their plants from where they are now located, and in many instances there is no particular reason why they should, but who find it advisable to establish branch plants, so located that they

The Remington Arms Plant at Ilion, New York, showing a change of shift. Note the immensity of the building and that down the street one can see the covered bridges leading to building on the right side. You can also see a few of the thousands of workers required to man this huge plant and its allied industries. This corporation and its subsidiaries produce firearms, ammunition, typewriters, and cash registers, of international repute

The Rome Wire Company. Rome manufactures wire ranging in size from finer than a silk thread to the largest cables for electric transmission lines in both bare and weatherproof, as well as the insulated varieties. Situated in the center of the fabricating copper district, it sends its products to all parts of the world. They make a wire so fine that, when woven into a screen, it will hold water, and others so large as to conduct electricity great distances under enormous pressure

Bird's-eye view of C. A. Durr Packing Company, Utica, showing present and proposed buildings. This modern packing plant has grown from a small beginning to one of the largest institutions of its kind in the East through the ability of its officers and the advantages of its location. Its products are not confined to a local market, but find their way to the East and New England States principally, but also to the South and West. As packers of meat and meat products, it has an enviable reputation for the quality of its goods

The International Heater Company is one of the large manufacturers of heating equipment of the conduit or pipe type and the pipeless hot air furnaces, as well as both hot water and steam heating systems. Its product is sold throughout the United States and Canada. Whererer cirilization has progressed to the point where man's comfort demands manufactured heat, the product of this firm is in demand because of its superior efficiency

The Upper Mohawk Valley, through the mountain and lake district to the north, affords the people a nearby playground and clean, healthful out-of-doors recreation

overcome territorial distribution obstacles.

Other manufacturers find it expedient to establish branch factories because such plants help them solve the labor turnover problem, while others locate branches in different industrial districts because they appreciate that it is more economical, in their given industry, to operate plants up to a certain magnitude than one plant of an ever increasing magnitude at one given location.

A number of these organizations will find it to their advantage to locate in this section of New York State for the same reason that it will pay the small manufacturers to locate here. They will find in the twenty millions of people who live but a short distance from the Upper Mohawk Valley a sufficient market to take the output of a branch factory. Others, having a foreign market, will see in Utica and the associated cities all the essentials for export manufacturing and shipping at the lowest possible combination of costs.

Now, let us see what the Upper Mohawk Valley means to the small manufacturer, the man who must find his market within a limited area and within a comparatively short distance from his production location. Allow us to make this personal with the supposition that the manufacturer is yourself.

Let us suppose that you make something the majority of men use or that is used in every household. To go after a national market would force you into the general competitive field and this would make it impossible for you to do business at a profit while a localized market will produce first-class returns. There is not a better state in the Union than the Empire State, for New York has over ten millions of people able to purchase any commodity as well as, if not better than, a like number of people in any other section of the country. If you want this localized market, this market within from one to two hundred and fifty miles of your factory door, come to the Upper Mohawk Valley, for Utica, the largest city in this industrial district, has rightly been called the "Heart of New York State."

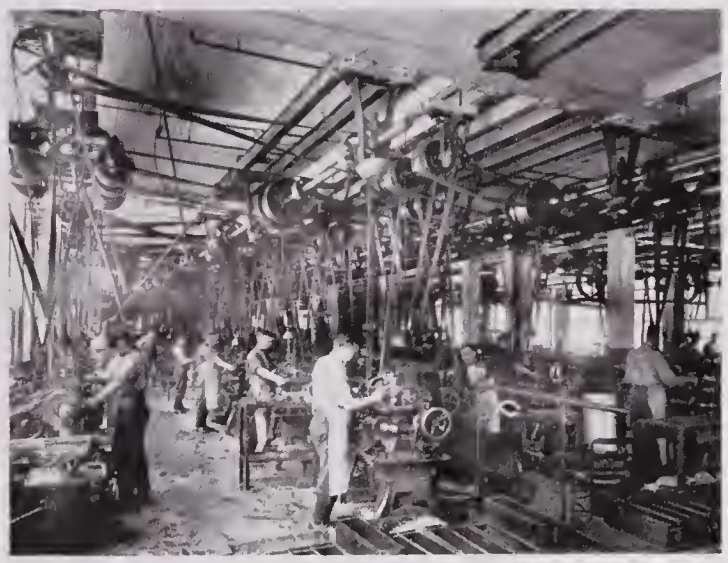
Let us say you make a food product. You now have a factory in Michigan and you have reached the limit of your localized market. You have tried the experiment of extending your market into other territory, but you have found that when you go beyond a given point your cost of distribution so greatly increases the trade thus developed becomes a liability instead of an asset.

It will pay you to come to New York State and study the possible market conditions It will pay you to come to Utica and study the manufacturing possibilities. Without giving up your business where you are now

The Upper Mohawk Valley has beautiful roadways leading in all directions. The one shown in the illustration is in the charming Adirondack Mountain regions. There is practically an endless number of there-and-back-in-a-day trips for the automobilist

Showing the green sand molds at pouring time on one floor of The Malleable Iron and Steel Company's plant, Oriskany. Plants of which this is a type have a variety of uses for electricity and gas

Weaving machines at work in the plant of Utica Steam and Mohawk Valley Cotton Mill. Practically all of this machinery is semi-automatic. Note the light and clean interiors



The Screwmaking Department of the Remington Cash Register Company. The cost of one screw can be accurately figured. To keep that unit cost as low as possible requires a quality power, delivered in quantity

View in the forge shop of the Utica Drop Forge and Tool Company. This concern is one of the world's largest manufacturers of gripping tools, most of which are nickel-plated. The U. T. K. brand is universally known

Finishing Department of the Duofold Health Underwear Company. Where women are employed it is essential that guards be placed around belts and pulley wheels. This eliminates the danger of accident from clothing being caught in the apparatus

One of the largest installations of electric ovens in the East is this battery of the Rome Brass and Copper Company, Rome. This concern produces bars and tubings of the above materials. Rome produces 10% of the brass and copper manufactured in the United States

located you can develop a new business along the same lines and establish a new plant in the Upper Mohawk Valley.

Study the advantages of the Upper Mohawk Valley from an industrial standpoint; take the facts and figures, and you will find that every fundamental which makes it the ideal location for large manufacturers causes it to be equally advantageous to the small manufacturer.

There is another essential for consideration and one which deserves the careful scrutiny of every industrial executive; this is man-power.

The large manufacturer, the man who heads an organization employing three hundred to three thousand or more hands, fully realizes that one of the vital considerations today is men. There has never been a time in the history of industry when manufacturers have given the attention to the subject of man-power that they are now devoting, for the human equation in business is an all-important factor in the industrial welfare of the future.

The industrial sociologists, those men who spend their time and their talents in establishing the reasons why men perform a given task in factory or office willingly and efficiently or unwillingly and inefficiently, tell us that to do good work a man must possess three attributes: he must possess the skill and knowledge necessary to perform the task, the health or strength to back up his skill and the willingness to perform the task in the best possible manner and in the least possible time. One of the leaders in this study of production costs from the man-power side, who had the opportunity to check some thirty thousand workers with the largest organization of its kind in the world, says that the most important factor in economical production today is the goodwill of the workers and the most important factor in the development and preservation of this goodwill is the surroundings of the workers when they are away from their work.

There is hardly a manufacturer who would think of erecting a new factory building without providing abundance of light through modern steel, concrete and glass construction, abundance of ventilation through rightly placed windows or a mechanical air distributing system, proper temperature through a heating system, and approved sanitary equipment. Most factory executives recognize the necessity of providing adequate space and ideal surroundings for their employees during the working hours, and yet a large number

A view of Little Falls, N. Y., showing the D. H. Burrell Plant, which is the largest producer of dairy machinery in the world. The farmers of our country are indebted to them for a large number of devices that take the drudgery out of the dairy industry and make it possible to realize more profit from their work. The cream separator, for instance, has demonstrated its worth

If you are an employer of labor you will realize at once the advantage of having such a home as this for your worker

seem to forget that the production value of perfect factory conditions can be greatly diminished through the conditions under which their employees live when not at work.

The manufacturer may pay the very highest given wage in his industry and give his employees every consideration and yet be handicapped because he is located in a congested community where rent rates force the majority of employees to live under conditions which are detrimental to their physical and spiritual well-being.

Men or women who live in large cities where there are crowded populations and where high land values create high rentals and cause even skilled workers receiving the highest wages of their respective crafts to live in limited quarters cannot reach their full productive value. A man who is forced to leave cramped-up quarters he calls a home, where the sleeping space is poorly ventilated, and is forced to spend an hour or more riding to work on a transportation system jammed with other workers, must reach his place of employment with a far lower degree of energy than the man who leaves pleasant environment, walks or rides a short distance to his work, affording him a splendid condition physically and mentally to give his very best to his task.

There is not space here to go back of these facts with exact details, but any manufacturer who will give the subject his careful consideration and who will devote the necessary time to an investigation will find to his own satisfaction that the home surroundings of a worker and the living conditions of his employees when away from their work have a very important bearing on his manufacturing costs.

The Upper Mohawk Valley is an ideal home land. It is thirty-five miles from Little Falls to Rome, yet it can increase ten-fold in population without coming anywhere near having a congested area.

While we are discussing this subject of the worker and his work it may be well to call attention to the fact that wherever it is possible for average wage workers to purchase and own their homes at a reasonable cost there is apt to be a much lower labor turnover than in localities where only a limited few can own homes and where the word home means little more than a roof overhead.

Some manufacturers consider this question of homes such a vital interest to their industrial success that they have located their factories where they could build up communities of their employees and where every head of a family could have a home of his own.

There is sufficient land in the Upper Mohawk Valley for a large number of manufacturers to carry out the individual industry community plan and still have at their command the other essentials which this Valley possesses in such abundance.

As you read there must come to you an appreciation that there must be a far lower turnover in a community where living conditions are ideal and your experience has taught you that when labor turnover can be brought to the minimum there is a decided lowering in production costs. Men and women who live in comfortable homes are much less apt to be transient workers than those who live in crowded tenements or lodging houses. But workers do not spend all their time when away from work at their homes, as we all know.

Another type of workman's home. Living conditions of this kind make a contented, prosperous community

A few of the many beautiful homes of the Upper Mohawk Valley. They are shown in proof of our statement that this section is an ideal one for homeseekers. This is doubly significant when one remembers its many industrial advantages and business opportunities. While these residences are all located in Utica, the largest city in the Valley, the other towns and cities possess quite a number of fine, substantial homes and the countryside has many attractive rural homes in beautiful grounds. Such a section, inhabited as it is by such a substantial citizenry, so alive with the spirit of progress and accomplishment, and so favored with natural beauty, cannot help but attain a high place in the nation's Who's Who. You will notice as you look at these pictures that each represents an ideal American home, for all these homes are detached homes, set apart one from the other, and with lawns landscaped in keeping with the personal desires of the respective owners. Desirable sites for other mansion-like homes are awaiting you in the Upper Mohawk Valley

TRENTON FALLS HYDRO-ELECTRIC STATION

This station is located on the West Canada Creek at Trenton Falls, 14 miles north of Utica, N. Y. Here the stream drops down over a series of four falls, ranging from eleven feet to sixty-three feet in height, in a limestone gorge with precipitous walls reaching a maximum height of one hundred eighty feet. By means of a sixty-foot concrete dam across the gorge above the falls, and two pipe lines leading from the dam down past the falls to the power house in the lower gorge, a gross head of 272 feet is developed in a distance of three-quarters of a mile. The total capacity of the seven units is 35,400 horsepower, of which 5,400 horsepower, in four units, was installed in 1900 and 1901. The remaining three units with a total capacity of 27,750 horsepower were installed in 1917 and succeeding years. The picture shows the modern power plant as it now stands. Just to give the reader some idea of the importance of this plant in a time of stress we only have to go back to the period during the World War. Through those years, when every driving force available was pressed into service; when every atom of energy, both human and electrical, was conserved to the end that formerly unheard-of feats in manufacture and preparation might be encompassed, one of the first things our National Government did was to contract with certain manufacturing companies and certain sources of power to operate them. Among the earliest of these two classes of industrial enterprises to be so contracted with were the two plants, Remington Arms Company at Ilion, which made the Browning gun, and The Savage Arms Company at Utica, which made the Lewis gun. The power required to operate these plants was in the Valley and close at hand. It was this plant you see here, the Hydro-Electric Plant of the Utica Gas & Electric Company at Trenton Falls, which supplied a large part of the power required in the making of war materials. All during those trying years, United States troops were stationed at every strategic point to insure its continued operation. Now, the war is over and America and her Allies emerged triumphant in a just cause. The two implements of war just mentioned played a very important part in that victory. The Upper Mohawk Valley again justified its claim to commercial supremacy

"All work and no play makes Jack a dull boy" is an industrial fact as well as an old saying and holds true regardless of Jack's age. Business hasn't a place for dullards and only uses them when better heads cannot be secured. During the last few years large manufacturing concerns of the United States have given large sums of money as well as a great deal of time and thought toward improving the social conditions of their employees. These manufacturers have come to recognize that recreation is re-creation and that the business of keeping workers fit through play is just as important as keeping workers true to a task through supervision.

The tennis courts, the athletic fields, the community centers, the gymnasiums, the club houses and other social and recreational features which one sees at so many industrial plants is proof that American business men thoroughly believe in giving their employees every opportunity to enjoy a good time and through the enjoyment receive a personal benefit which will make better men and better women.

What most of us do with our time between the hours when we finish our day's work and the hours when it comes time for us to sleep depends greatly on what there is an opportunity to do. If we live in crowded communities where there are few, if any, provisions for true recreation we naturally turn to such means of pleasure as are at hand; and, while these pleasures may not be destructive, they are generally negative. If we live where there is an opportunity to enjoy six or eight hours in the open we develop a desire for constructive pleasures which are positive, keeping us healthful in both body and mind.

The Upper Mohawk Valley is a great playground within itself. It is a beautiful country of historic grandeur. For over a hundred years travelers, writers and poets have come to the land of the Mohawks to see its mountains and hills, its rocky gorges and its beautiful waterfalls. Every turn in the road between one city and another, yes, every turn in the road between villages and hamlets, brings a new pleasure to the eye and with it all practically every spot is connected with history or legend satisfying the most enthusiastic sentimentalist and exciting the deeper emotions of the studious.

To appreciate the beautiful in the high arts, to grasp the beautiful in written words, or to detect the beautiful in musical notes requires a cultured taste, a certain developed sense of selection, but to enjoy the beautiful in nature is something which nature itself seems to have given us all.

There are not just one or two outing spots in the Upper Mohawk Valley. There is a different spot for every day in the year and a new spot daily for years to come. Yes, the Upper Mohawk Valley is a place of all-year-'round outdoor sport. Every man and every woman with the real love for the out-of-doors will find here an opportunity to enjoy their own particular form of recreation and also learn the thrills of other sports denied them in other localities. Men and women who have never appreciated what it means to get out in the open will come to love this land and its great outdoors.

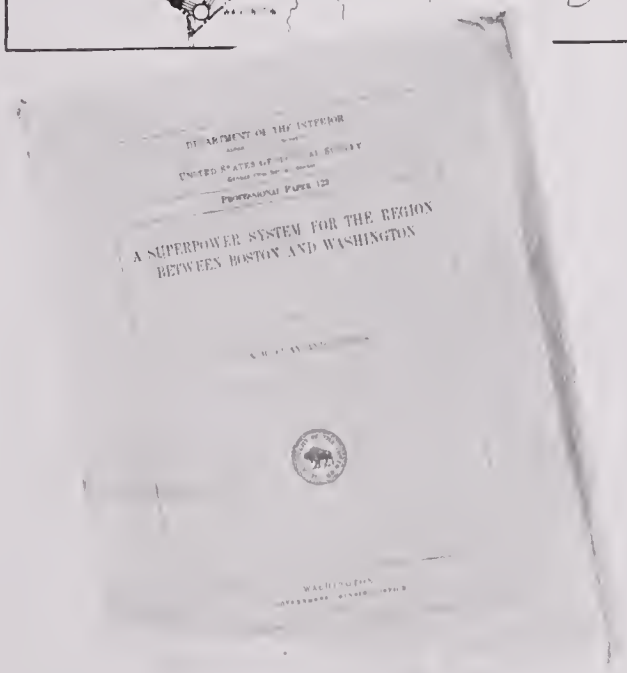
It is a wonderful country for the head of a great industry. It is equally a delightful homeland for the executives. It is a paradise indeed for the wage worker. People who live in the Valley of the Mohawk will not willingly leave for other parts on the merest pretext.

The Adirondack Mountains are to the north of the Mohawk Valley and it is only a few short miles to the heart of this great playground. The Deerfield Hills, which are part of the north section of the City of Utica, are foothills of this famous range.

The Mohawk Valley is historic ground. You can make Americans where America was made. The old landmarks of the past are being preserved to stand as a constant reminder to coming generations that it cost something to make us a nation and that it is well worth the cost to keep our freedom.

When the average worker owns his home he not only evidences real thrift, but he becomes a potential capitalist, with an entirely different outlook on industrial and social conditions. He is not only thrifty and willing to place his savings in the banks, to follow the advice of his employers or bankers and invest his surplus in sound local securities, but he also appreciates that he is making a profit from his labor and is more willing to do his best than the man who cannot see the tangible results of his toil.

The Upper Mohawk Valley, then, has all the essentials which are generally taken into consideration in a scientific study of factory location. It has an ideal geographical location when the inter-relation of markets, dis-


DEPARTMENT OF THE INTERIOR

PROFESSIONAL PAPER 123

A SUPERPOWER SYSTEM FOR THE REGION BETWEEN BOSTON AND WASHINGTON

WASHINGTON

The Superpower System, as outlined in this report and as detailed by an elaborate survey of the power systems of the Eastern States, sets forth a plan of so interlinking these power systems that any given section will at all times have sufficient power. The Upper Mohawk Valley, through the Utica Gas & Electric Company, has such a power at the present, and, while not following the super plan in all the details, has formed an arrangement with other power interests which assures an even power load at all times. The map from the report shows Utica as a load center and distributing point of power from the proposed St. Lawrence River development. However, highest quality power is assured all industries of the Upper Mohawk Valley, without the suggestions of this survey being placed in effect

tribution and population are carefully charted. It has unequalled transportation and shipping facilities. It has an abundance of available lands so that it cannot only provide the sites for a large number of industries, with sufficient reserve for future expansion of each industry, but it can also provide lands for the homes of the workers without the necessity of building other than single or detached dwellings and it is a beautiful land with unlimited means of healthful recreation and pleasure. Yet, there is one more essential for your consideration, the one great essential that, when joined to the others, forms the strong foundation upon which to lay the claim that the Upper Mohawk Valley will soon be the great industrial center of the United States.

This basic essential is POWER. It is taken as granted that the majority of the industries which will locate in the Upper Mohawk Valley will closely resemble the factories now located in this district in that, while they will be greatly diversified in the nature of their respective products, they will be alike in the high quality of these products, and it is recognized by technically trained production experts that to economically produce the highest quality of manufactured goods requires a power which is measured by quality as well as by quantity.

There was a time when if any thought were given to the cost of power it consisted in trying to determine it at the coal pile, or at the meter as it came into the plant, and then distributing this assumed cost over the entire production at so much per square foot of floor space: measuring it in bulk and purchasing by quantity. Nowadays, power, like every other phase of factory cost, is measured in terms of a given operation or the finished product: here is where power should be purchased by quality.

It is common practice in cost finding and cost distribution to charge against each department or against each machine a given part of the general overhead to cover the floor space occupied; with this general overhead go other specific costs peculiar to the industry or the individual organization and to these is added the labor cost of the given operation. A careful study of the subject will show that the quality of power is closely associated with all the other production costs and that the quality can lower or increase these costs.

It is evident that it is impossible in a general discussion such as this to enter into specific details as the figures which could be

A view of part of the business section of Rome. Rome is the center of the copper wire and tubing industry of the United States. Its many large plants that make copper and brass products insure a thriving business community. The city has a cosmopolitan shopping district with many up-to-date stores. It has trolley connections with the other cities up and down the Valley. It is growing rapidly and fast becoming one of the most important cities of the section

The old Court House at Whitesboro, built when this village was the county seat of half of the State of New York

used would necessarily be arbitrary and so of little value. All that can be done is to cover the subject in a theoretical manner and then offer to prove the theory to anyone in authority in any industry with data arranged in keeping with his individual problem.

Space is worth so much a square foot, the machine has a value estimated by operation or by hour and labor is worth so much an hour. When the machine can be kept at full capacity production every work hour the other costs are held at a minimum, but if the machine is operated at less than capacity through insufficient power, or through non-uniformity of power, or if it is idle through the failure of power supply, all the other costs are thereby increased.

The full capacity of machines can only be received where they are moved by the highest quality of power. Let the power load fluctuate several times during the day for short periods or drop considerably during a given period and there is necessarily a loss in production. Power, to be efficient, must not only be adequate, but it must be uniform in quantity and dependable at all times.

Power cost is a very small item in the average production costs. It is often not more than one per cent and seldom more than four per cent and yet it can affect the other costs as greatly as fifty per cent.

The power which is making the Upper Mohawk Valley supreme in industry is not only practically unlimited in quantity, but it is produced and distributed in such a manner that it is highest-quality power.

When you come to Utica to investigate the possibilities of the Upper Mohawk Valley we will show you the present hydro-electric generating stations and the high-tension systems whereby this power is distributed over the Valley and the adjoining districts. Then we will take you to our steam plant at Washington Street Station in Utica, and into the Chief Load Dispatcher's room. You will then appreciate that we manufacture power, that we take the power confined in water and coal, raw power, turn it into electric energy, refine it and distribute it in the form of the highest-quality power. If you wish us to do so we will take you to one or more great industries where you can see this power applied and you will then realize that power is not estimated at the meter, but in the finished manufactured product which was made through the utilization of this power.

You will also appreciate that the Upper Mohawk Valley has sufficient available raw power that when it is refined and distributed will supply any power demand which may develop within the territory.

Come to Utica! You will be welcomed by the business organizations of the Upper Mohawk Valley, and given every opportunity to verify the claims set forth in this Brief.

Come to Utica! And when you come, make the Utica Gas & Electric Company your headquarters. We are a public utility company and we are here for the purpose of serving you.

Write us for any information you may desire regarding Utica or the Upper Mohawk Valley. We will see that your letter is placed in the hands of the organization or the individual most competent to reply and that you receive the full details of your request.

Come to Utica and feel the fine co-operative business spirit which is making this section of the country the greatest industrial district of the United States.

The old mill site stands as a reminder of what has been accomplished in power development in a few short years

The Cities and Towns of the Upper Mohawk Valley

IN WRITING the story of a city it is customary to go back to the man who first came along the way where the city stands and then tell of the people who first built homes in the vicinity. We would do this, too, if we were writing a history, but we are not historians; we are busy men, and so we are writing to you in the same way that we would talk to you if we were sitting in your office or visiting with you in your library. This is not a history—it is an open discussion; or, better still, a conversation placed in type setting forth the present assets of the communities of the Upper Mohawk Valley as they relate to industry and to the men and women who create industry through that wonderfully productive and inseparable combination of resources called labor and capital.

We can use the same formula in judging the worth of a community that we would use in judging the worth of a business enterprise. If a given business house has always met its commercial obligations in the past, is meeting them promptly at the present and has the visible wherewithal to meet them in the future it can be set down as solvent. If a city has always met its obligations to organized society, if it is meeting them today, and if there is every evidence that it will continue to meet them, it, too, can be written down as solvent.

Here are the assets of Utica, New York. These assets prove it is absolutely and abundantly able and perfectly willing to meet all obligations to society for all time to come.

The first asset of Utica is its places of worship: Its seventy beautiful churches, representing thirteen different denominations, stand as a perpetual sign that the one great essential is there. Without religious organizations to afford the opportunity to worship for all its people a community would be bankrupt regardless of what other facilities for every other function of mankind were listed as among its possessions. All the leading faiths of the Christian religion have houses of worship in Utica and the adherents of the Jewish faith have four synagogues. The newcomer to the city can easily find a church home where friends of like mind will bid him welcome.

In importance of value to the community the school comes second only to the church. The public school system of Utica includes kindergarten, grammar, vocational and high school courses. There are twenty-six schools, including one high school, giving classical, technical and vocational training; one part-time school for employed pupils; and twenty-four grade schools. The system includes three open-air schools, nine classes giving special training to mentally defective children, and has a special force of twelve teachers of music, ten teachers of drawing, seven in domestic science, seven in manual training, five instructors in health and hygiene and four doctors giving medical inspections. The faculty includes seventy-eight teachers in the high school and four hundred

Grace Church, Utica, whose lofty spire can be seen from far out in the countryside, and tells the beholder that a city is near

The Utica Free Academy was built at a cost of $250,000. In 1797 Joseph Dana kept the first school in Utica. The building which he used is a far cry from this modern fireproof building of today. This fine High School is in answer to Utica's rapid growth and a barometer of the value of her future citizens

and forty-seven teachers in the grade schools, including principals and supervisors.

There are seventeen hundred students in the high school and fourteen thousand five hundred pupils in the grade schools.

The property value, including land, buildings and equipment is five million dollars and one million two hundred thousand dollars were expended for maintenance of the school system in 1922.

In addition to the public schools there are seventeen private schools in the city, including parochial schools and two commercial institutes.

There are two institutions of higher learning in such close proximity to Utica that they can both be considered as part of the city's educational facilities. These are Hamilton College, at Clinton, about ten miles from Utica, named after Alexander Hamilton, and founded by Samuel Kirkland, a missionary to the Indians, who originally established a school for Indians; and Colgate University, located at Hamilton, thirty miles from Utica.

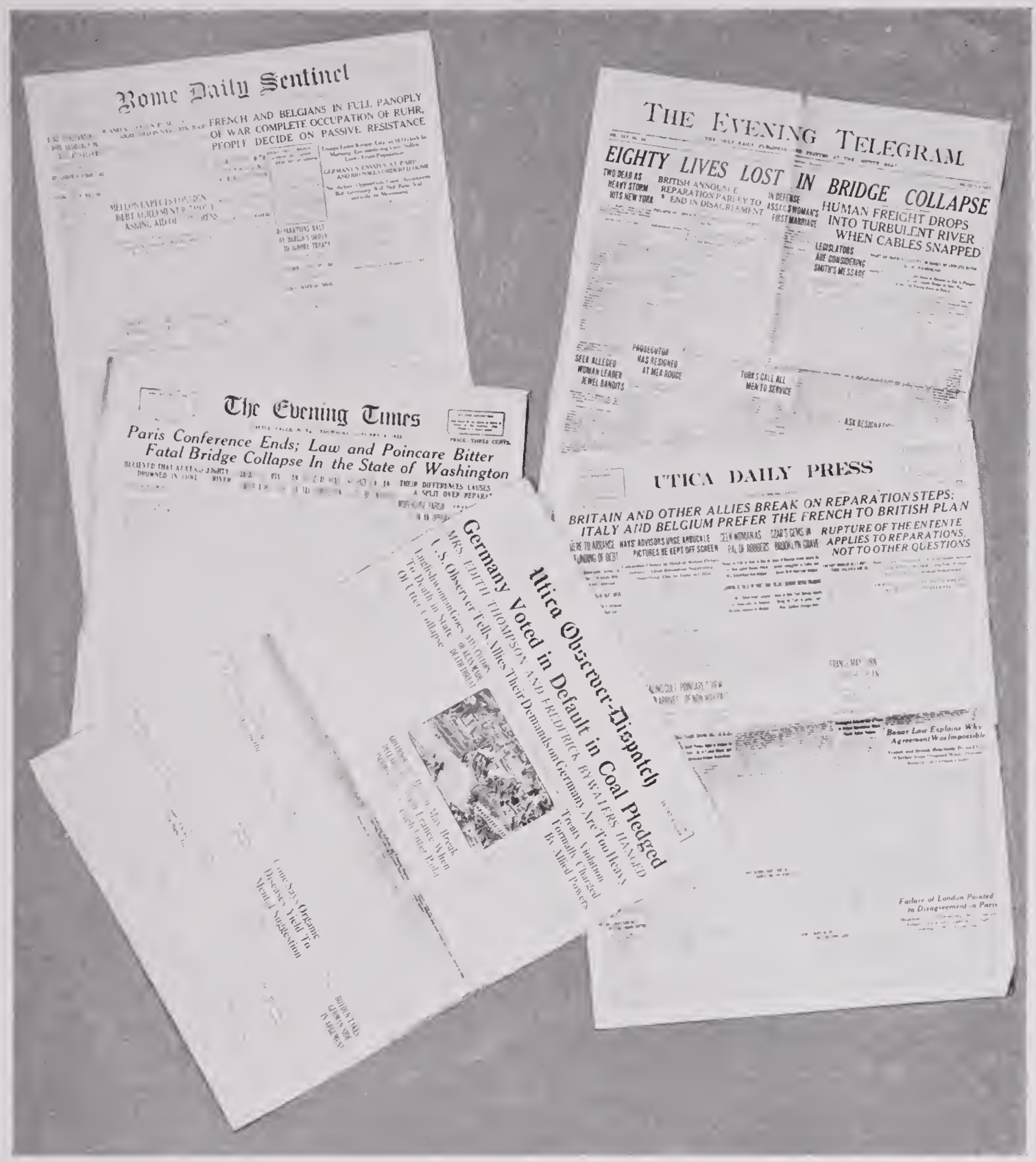
The public library system of a city should be considered as a part of the educational facilities, as its first purpose is to strengthen the intellectual life of the people. The public library of Utica is as old as the city itself. It came into existence the year that the city was incorporated. Thirty years ago the library contained about ten thousand volumes. Today it has one hundred and eight thousand volumes and a circulation close to four hundred thousand books a year. There are branch libraries and a special service to schools. It is now costing about seventy thousand dollars a year to maintain these libraries.

A free church and a free school must have a free press, so the third asset of Utica is its daily newspapers.

Utica has two daily newspapers. The Utica Observer-Dispatch, published evenings and Sundays and having a circulation of thirty-eight thousand copies, and the Utica Daily Press, a morning newspaper with a circulation of thirty thousand. About one-third of the circulation of each of these papers

The Public Library, Utica. The city has always had a library. The people of this city realize the immense value of a liberal education and to that end they have here over a hundred thousand volumes

If education is the mother of progress, surely she should have a thriving family in the Upper Mohawk. With such institutions of learning as Colgate and Hamilton, situated as they are so close to the cities of the Valley, no young person in these communities need go unlearned. This page shows some of the beautiful buildings and grounds of these two schools. Amid such, and breathing the atmosphere of a great past and expectant future, the young mind cannot fail to make the most of such wonderful opportunities. These institutions, many of whose Alumni have been and are known to the world through their contributions to the arts and sciences, or whose inventive genius has given some contribution to civilization, or whose ability in the world of business has created work and a livelihood for thousands, are among our country's foremost citizens



Without the public press our country today would be at a standstill; without our daily newspapers civilization would become stagnant. It is the truth that makes us free and it is the newspapers that free the truth. The local newspapers bring the world to our doors and papers throughout the world take us to the doors of others thousands of miles away. Without newspapers, the greatest of all educational forces, we would make little progress, for water cannot rise higher than its source and civilization cannot rise higher than the intelligence of the great mass. Newspapers are leaders of thought, not because they assume the function of the teacher, but because they gather the facts of everyday life and place these facts before the public so the public can judge as it will. The Upper Mohawk Valley is now a great industrial center and the newspapers of the communities of the Valley have played no small part in the common task of making it such. It will soon be the great industrial center of the United States, and the newspapers of the district, The Evening Times of Little Falls, The Utica Daily Press and The Utica Observer-Dispatch of Utica and the Rome Daily Sentinel, will be the principal agency in bringing this about because these daily publications and the weekly publications in the Valley will keep all the facts of the industrial progress of all the communities before all the people. The newspapers are always willing to co-operate with the leaders in every forward movement and it is the newspapers which are broadcasting the slogan: "Not only a greater but a better Upper Mohawk Valley." The daily and weekly publications of the Valley will take the news of the industrial progress of the district to over two hundred thousand people. They will not only tell these people what has been done and what is being done, but they will tell the people what must be done to make the Upper Mohawk Valley the greatest industrial center of the United States; the people, reading and believing, will see this great work is carried out with nothing left undone. This is the true power of the press and a power which all clear-thinking people desire to see increase. It is optional with a man if he buys and reads the national weekly papers or the magazines, but it is necessary and practically compulsory for him to read his local daily paper if he is to perform the bounden duties of a citizen

The Church House of the First Presbyterian Church, Utica. Built at an original cost of $250,000, it is of brick and cut stone and after the colonial style. Here are held the various gatherings, socials and benefits of the various church societies. The insert shows the new church now in course of erection. It is located on beautiful Genesee Street, one of Utica's prettiest residential streets and when completed will form one of the finest church properties in the United States

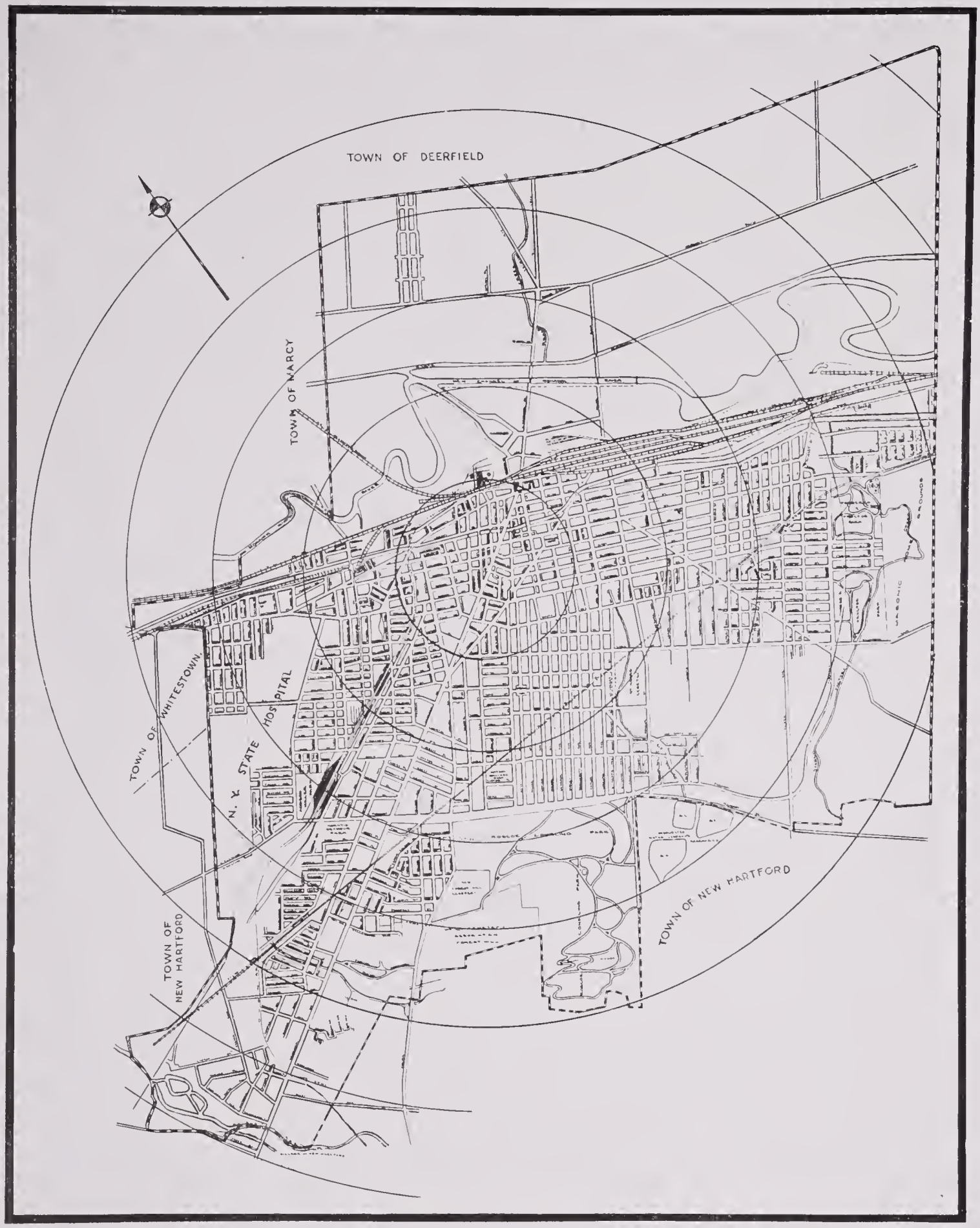
is to the other cities and villages of the Upper Mohawk Valley and to the cities at the north. Both the newspapers of Utica are constructive publications, printing the news of the world and the nation in association with the news of local and territorial interest. They are metropolitan in appearance and policy, yet essentially family papers, as both avoid the sensational known as "yellow journalism."

The newspapers of Utica are not only metropolitan in arrangement and character of news printed, but they are cosmopolitan, truly serving the great mass of people and carrying into the homes a constant inspiration of a bigger and better Utica and a larger and more useful Upper Mohawk Valley. The papers of Utica type the best in American journalism and, therefore, are an asset to the community.

If you were making an audit to find the true worth of a city, what would you next put down? It seems to us that after you had received its qualifications to sustain and advance the spiritual life and the intellectual thought of the community you would ask for information relating to those organizations which contribute to the comfort, the health and the safety of the people as a whole.

The first necessity to all of us alike is an adequate supply of pure, clear water. The histories of early mankind tell us that the ancients recognized this need and the ruins of what were once great cities show that one of the first engineering problems which man

This famous stone, called the Indian or Oneida Stone, was the sacred stone of this tribe. The warriors of the tribe used this stone to split their ears on in preparing for battle and also placed their enemies' scalps upon it



Map of the City of Utica and surrounding townships. Since the 1920 Federal census was taken the city has grown remarkably fast. In three years it has added over eight square miles to its territory and increased its population about ten thousand people. This expansion is readily explained. The many natural advantages it possesses and the great industrial handicaps it holds over other regions have all combined to bring it about. Then, too, its citizens believe in its future and are working toward a Utica of three hundred thousand people by 1940. Its manufacturing plants are not confined to one section and yet do not encroach upon the residential sections of the city. Its beautiful homes and home districts are secure against the noise and dust of its industries. The city is so situated that it can develop in ony direction without becoming congested

One of the reservoirs for city water supply owned by The Consolidated Water Company of Utica, which is the largest public utility of this nature in New York State. Eighty-five per cent of the water supplied the Valley is derived from the northern watershed, that is, the foothills of the Adirondacks

ever solved was the building of aqueducts to supply the people of these cities with water.

These primitive engineers built great ditches, canals, and even pipe lines to lakes in the hills and to mountain streams, so the water would flow to the homes of the people in the plains or the valleys. The water came down by gravity and there is evidence that in a few instances it was piped into homes in not a greatly different manner than we receive our supply today. The water supply of Utica, New York, comes in the same way. Modern engineering methods, with a modern system of storage, control and distribution are used, but the water flows through the pipes as it comes down from the hills without the influence of any applied force.

This water comes from the foot of the hills of the Adirondacks, twenty miles north of the city and from the hills to the south. It is stored in great reservoirs from two hundred to nine hundred feet higher than the city and there is an endless supply. At the present time it takes twelve millions of gallons every twenty-four hours to supply Utica and the adjoining communities. The demand could be ten times as great and the supply would be adequate, as additional pipe lines would be all that is necessary.

Two hundred and twenty miles of mains are now used to distribute the water to over sixteen thousand users. More mains will be constructed as fast as service demands.

This pure, clear water from an inexhaustible source is distributed by the Consolidated Water Company of Utica. The service rendered the public places it among the assets of the city or, rather, the community.

The fire department of Utica answered five hundred and seventy alarms during 1922. Of these alarms, four hundred and ninety-seven were actual fires. The fire loss for the year was two hundred and eighty-seven thousand dollars on property having a total insurance valuation of over five million seven hundred thousand dollars. Over two-thirds of the entire fire loss was caused by nine fires in which the loss exceeded five

One type of street car operated on the city streets of Utica. This car is of the Peter Witt type, with wide, double doors at front used only for entering the car and double doors at side which are used as exits. This saves time to the operators and affords a great deal of comfort to patrons

The above picture is from the architect's drawing and is the Scottish Rite Shrine Temple. This beautiful structure will furnish the City of Utica with an auditorium and dining room sufficient to entertain its largest crowds. This has been sadly lacking in the past, but due to the progressive spirit of Utica Masons these ample accommodations will bring to the city gatherings and conventions, entailing as it does large numbers of visitors, who will see the Utica of today and, seeing, go forth to spread the fame of the "Heart of the Empire State"

The picture at the left is the Masonic Temple. The Masonic Orders of Utica believe in boosting their own city. They stand for a progressive city and are doing all they can to further the interests and works connected with making Utica a greater industrial center. They also play an important part in the charitable activities of the city, giving large sums to the poor, providing homes and asylums for the aged and infirm, and doing generally those things calculated to benefit the less fortunate

Perhaps no county in the United States boasts of a finer building in which to carry on its business than Oneida County, of which Utica is the seat of government. This structure cost over a million dollars and houses the United States Court for the Northern District

thousand dollars per fire. The department is controlled through ten stations, has one hundred and eighty-four call boxes and serves through one thousand two hundred and eighty-nine fire hydrants. It is a completely motorized organization and up to the highest point of efficieney. There are one hundred and fifty-one men in the service, including a chief, four deputies, thirteen captains, fourteen lieutenants, two superintendents and a surgeon. A fire prevention bureau, a valuable innovation in fire department practice, was put into effect in 1922.

The police department consists of one hundred and twenty-two men and one matron. These include the chief, a deputy chief, three lieutenants, eleven sergeants, nine detectives, one finger-print expert and photographer, surgeon and a matron. The police are efficiently organized and especially well commanded. In 1922 this department handled over ninety-six hundred cases of all kinds and recovered stolen property to a total value of over one hundred and ten thousand dollars.

The people of Utica, acting collectively, not only place a guard over their property through the fire and police organizations, but they protect and guard the health of the community. The Bureau of Health is under the jurisdiction of a health officer, assisted by a deputy, two registrars, a disinfector, a veterinary, five meat inspectors, two plumbing inspectors working through a plumbing board, five health nurses and three sanitary inspectors.

Has Utica a public park system? Yes, Utica has seven hundred acres of parks maintained under the direction of the Department of Parks. The first park, Chancellor Square, consisting of three and a half acres, became the property of Utica back in the days when it was a village, while Steuben Park, consisting of one acre, was set apart from the John Post purchase over one hundred years ago; so the city, you see, has always had parks. Most of its great parks represent the gifts of Mr. and Mrs. Thomas R. Proctor, who gave the city Horatio Seymour Park, consisting of fourteen and a half acres; Truman K. Butler Park and J. Thomas Spriggs Park, each containing a little less than an acre; Thomas R. Proctor Park, containing over one hundred acres; Roscoe Conkling Park of three hundred and eighty-five acres and Frederick T. Proctor Park. The city has several other small parks and has purchased from the State of New York the old course of the Erie Canal, which is to be developed into a beautiful boulevard.

The parks of Utica are beautiful and restful, not only because the city spent nearly one hundred thousand dollars on parks and playgrounds in 1922, but because the entire city, with the possible exception of the solid commercial section, can be called a park.

Utica's City Hall, where the general business of the community is transacted. The splendid architecture of this building reminds one of some old mission

The character of any certain tribe or race of ancient or historic man was, and is, determined by his places of worship. Here are shown the interiors of four of Utica's Churches. The city can boast of some of the finest houses of worship in the United States. Within such walls and amid the quiet and peaceful surroundings, the cares of the world are shed as a garment and man finds comfort and renewed faith and energy in life and work

Nature made Utica, and the surrounding country for a hundred miles or more, one of the most fascinating and delightful portions of Ameriea, and made it in such a way that man hasn't been able to destroy this beauty. The parks of the city preserve this beauty and bring it within walking distance of the homes of Utica. The large parks, places of health and recreation for thousands, all the year furnish playgrounds for young in reality and those grown older in years, but young at heart. The average winter temperature in Utica is a little below the freezing point and so there is generally snow on the ground. The air is dry and brisk and it is usually pleasant out-of-doors; so there are thousands tobogganing, skiing, snowshoeing and skating, as well as curling. In the summer time there are all the sports common to Americans in the public parks.

In addition to the public parks there are fifteen playgrounds under the direction of a Recreation Commission and here the children of the city play under the supervision of skilled trainers and developers. The parks and playgrounds of Utica are not only an asset, but one of the features of Utica upon which too high a value cannot be placed.

Utica willingly meets its obligations to the sick, the unfortunate and those in distress. Through the Community Chest Committee the people of the city contributed two hundred and fifteen thousand dollars in 1922 to support the charitable and civic organizations which serve the public independently of the city governments and whose funds must, therefore, come from free-will givers. The hearts of the people of the "Heart of New York" and their open pocketbooks are an inestimable asset.

Utica, too, has fine hospitals: The General Hospital, St. Elizabeth's Hospital, St. Luke's Home and Hospital, Faxton Hospital and the Homeopathic Hospital. The combined capaeity of these hospitals is four hundred and eighty-five beds. In addition to the hospitals there is the Utica City Dispen-

Hotel Utica, located at Lafayette and Seneca Streets, is the largest between Albany and Syracuse. It is a thoroughly modern and progressive hotel, both in management and accommodation

sary which was founded in 1870 and which pays special attention to tuberculosis, throat and dental cases through its clinics.

Utica has three orphan homes. The Children's Home, St. John's Orphan Asylum and St. Joseph's Infants' Home. It also has the House of the Good Shepherd. These institutions care for the little ones. There are four homes for the aged: Home for the Homeless, the Home for Aged Men and Couples, the Old Ladies' Home and St. Luke's Home. The finest thing in the story of these hospitals and homes of Utica is that many of them were founded when the city was little more than a small town, and the hospital or home had its beginning in an ordinary residence. Practically all of them are housed in specially constructed buildings and there is not one of these institutions but what would be a credit to any city anywhere. The people of Utica have never been in debt to the unfortunate and it is evident that they never will.

When you come to Utica for the first time and your friends in Utica, with a just pride of worth, start to tell you of the social assets of the city, do not be at all surprised if the first place they insist upon showing you is the Masonic Home at East Utica. This wonderful group of buildings, located on one hundred and ninety-eight acres of ground, affords a home for the aged and infirm Masons of the State, their wives and the homeless children of the Order.

A new Memorial Hospital for indigent soldiers and sailors erected to the memory of the Masons who fought in the World War has just been constructed in connection with this home at a cost of a million two hundred thousand dollars and is the finest institution of its kind in the country. It costs the Masons of New York State over a million dollars a year to support this wonderfully organized institution.

The Utica State Hospital has been located in this city since it was founded in 1836 by the State Legislature through the efforts of Dr. Charles B. Coventry and Dr. John McCall, two of the pioneer physicians of the Upper Mohawk Valley. A new hospital costing over four millions of dollars is now under course of construction on one thousand and twenty-five acres of land located to the west of the city and will eventually care for three thousand patients.

Man is a sociable organism. Take away the fraternal and benevolent organizations, the clubs and societies from the average Amer-

Hotel Martin is another of Utica's up-to-date hotels. It has several dining rooms, mezzanine, a very attractive lobby and a first-class cafeteria. It is helping to spread the favor of Utica's progressiveness

iean and you take away the finest characteristie Amerieans possess. Man is sociable and likes the soeiety of other men on one general plane. The fraternal and benevolent societies form the great common leveler. Utiea, of course, has its fraternal and benevolent orders.

Utica Lodge, No. 47, Free and Accepted Masons was organized in 1816, over one hundred years ago. Oneida Chapter, No. 57, Royal Arch Masons was established in 1817. Utica Commandery, Knights Templar, dates baek to 1823, while Yah-Nun-Dah-Sis Lodge of Perfection and Ziyara Temple, Nobles of the Mystie Shrine, received their charters in 1877 and 1878, respectively.

How the great fraternities serve the public as well as serve their respective membership is illustrated through the new Scottish Rite Shrine Temple which these two Masonic bodies now have under construction. This building, architecturally beautiful, will have an auditorium which will seat twelve hundred and forty-eight people, and a banquet hall which will comfortably seat at table over one thousand people.

Their own announcement, "We will build a temple," explains its value to the people of Utiea when it says: "Utica is to have a massive building that will house big conventions, accommodate the most largely attended concerts and efficiently handle banquets where multitudes can be feasted and make merry."

There are eleven lodges of Odd Fellows in Utica and these lodges own two temples. Over one thousand seven hundred men of Utica belong to this order, and the associate order, Daughters of Rebecca, has a membership of eight hundred women.

The Imperial Council Royal Arcanum of Utica was organized on April 1, 1878, less than one year after the founding of the order.

The busy men of Utica evidence their belief in fraternalism as exemplified by the B. P. O. E. Utica Lodge of Elks, which was organized in Pythian Hall on May 17, 1885. Its charter shows it was instituted with fifty-eight members. This fraternal organization has made wonderful progress, for it not only has over two thousand members at the present time, but it has a beautiful lodgehouse and club. This club is open at all times and its dining hall service and special social events are thoroughly appreciated by the members and their families.

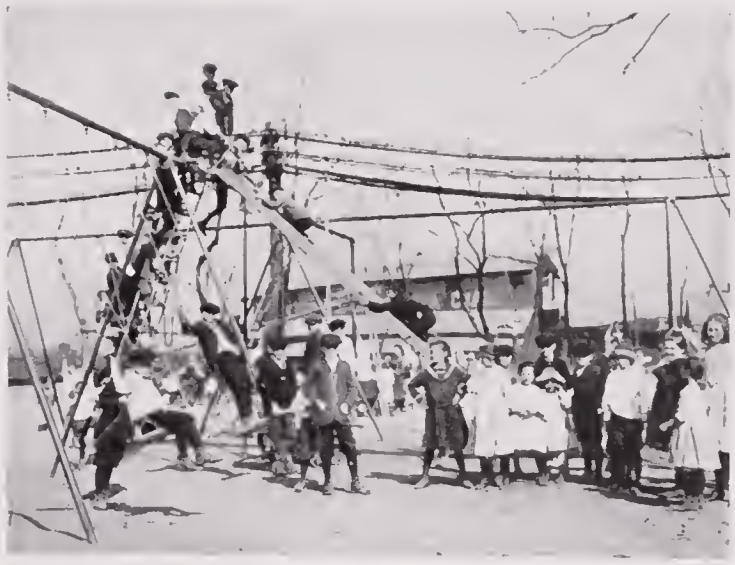
One of the youngest fraternal organizations in the city is Utiea Council, Knights of Columbus, which was founded in 1896. This great society has two thousand seven hundred members in Utiea and maintains an attractive clubhouse whieh contains a complete gymnasium and auditorium as an annex to the club.

There are nine Courts of Foresters, six Knights of Maccabee Tents and a large number of other fraternal organizations. It is safe to say that if you belong to any of the great benevolent orders you will find your brothers meeting in Utica.

Utica has one hundred and fifty miles of streets. One hundred and six miles of her streets are paved and all streets are kept in first-class condition. One thousand five hundred street lights illuminate the city at night and two hundred lamps of the boulevard type are used in the main thoroughfares. The people of Utica fully appreciate that Utica is the center of the Upper Mohawk Valley and that this Valley is destined to be the greatest industrial center of the United States. The city authorities realized that the best time to plan for the expansion of the city is before the expansion takes place and so a plan for the development of the major streets has been made. This plan will undoubtedly be elaborated and carried out by the people of Utica and the adjoining communities, thus providing the city and the neighboring corporations with main thoroughfares whieh will take care of all traffic and without congestion regardless of the future growth of this area. The ability to see ahead and plan now how to serve future needs is an asset to Utica.

When you come to Utica for the first time and step into the Union Station you look with surprise at this attractive structure, one of the finest railroad buildings in the country and the largest in the state outside of New York City, and you say to yourself: "Utica must be a railroad center." You make inquiry and you find that your impression is correct, for five railroads leading north into the mountains and resort country and into Canada and Montreal and Ottawa, east and west from coast to coast, and to the New England States, south into the coal fields of Pennsylvania and east to New Jersey use this station.

You take a cab and drive to one of Utica's splendidly appointed hotels and then decide



The views on this page are of some of Utica's parks and playgrounds. The city is fortunate in that it possesses, among its citizens, people who can afford to give the city sufficient land and money to make possible the extension of the park and playground system of the city, which is so necessary to any urban community. Some idea of the beauty of these parks of Utiea and of the usefulness of the playgrounds can be gained by a study of this page. What it costs a city per year to maintain such places pays back large dividends in the gain of healthy, sturdy children. A large part of a child's early education is derived from the things it sees and lives among. Cities growing larger and larger necessarily have busier streets and so, where once the neighborhood children gathered on the corner to play, they must now be provided with places where the motor truck is not allowed. That the youngsters enjoy these placcs is evident from the pictures shown above

The Union Station of Utica is one of the finest in the country. One can see that such a large and expensive building could only justify itself where there is sufficient demand by a traveling and shipping public. Utica is, you must remember, the "Heart of the Empire State," and many lines radiate from this city to all parts of the country. It is anticipated that the near future will see Utica an important terminal. This will come about through what is known as the Albany cut-off and the electrification of the New York Central lines between Harmon and Buffalo. This will give an electrified system from Buffalo to New York City. Such a change will bring about 30,000 employees and their families to Utica

to go out and inspect the city. You walk along the three miles of streets which traverse the business section of the city and look at the display windows in the various stores. In these store windows and in the well-arranged and attractive showrooms into which you later wander you see the best merchandise the country offers marked at reasonable figures. Then you find yourself thinking very favorably of Utica and its merchants and you are impelled by these fine impressions to remark to one of the business men: "This is a real city. You have everything here which can be found anywhere. You can tell a city by its retail section and your stores equal those of the great business centers. You have good street car service that I would say serves every part of the city, for I see the tracks lead in every direction. I notice, too, that interurban cars put you in touch with a large section of the state. There is everything in Utica which one expects to find only in the great metropolitan centers. How large a city is Utica, anyway?"

This business man, any business man in Utica, will tell you in reply that Utica is a Metropolitan Center, the Metropolis of central New York State. He will have every right to agree with you and accept your compliments on behalf of the people of the city because he knows you are telling the truth. He will tell you a great deal more than we are telling you in this short conversation and you will leave the city with the same pleasant impression that you first received.

The Federal Census of 1920 credits Utica with having ten and a half square miles of territory and a population of ninety-four thousand. The city now has a territory of eighteen and eight-tenths square miles and its population is estimated at one hundred and four thousand people.

The following figures taken from the Census Records show the growth of Utica:

1850	17,565
1860	22,529
1870	28,804
1880	33,914
1890	44,007
1900	56,383
1910	74,419
1920	94,156

Utica's Chamber of Commerce has been in existence for over twenty-five years. This civic institution has ever been the leader in public improvements, in matters seeking to promote a larger, a more progressive Utica, and has always kept the outside world informed on the advantages to be had in the Mohawk Valley

The Chamber of Commerce is officered by the big, public-spirited men of the city, recognized leaders in industry, finance and civic progress. Under such guidance the future of Utica is assured

The home of the Utica Council, Knights of Columbus, was established in 1896. Since that time the members of this progressive organization have spared no effort nor missed any opportunity to do good to their city. As a body they stand for everything conducive to the good of the common weal; contribute liberally to the causes of charity and support vigorously any movement calculated to increase Utica's greatness at home and abroad

Statistical engineers, using these figures as the basis of their estimates, and taking into consideration the ever increasing percentage of year to year development in the Upper Mohawk Valley, forecast that Utica will have a population of one hundred and eighty thousand by 1930 and well over the three hundred thousand mark in 1940.

There are twenty-three thousand families in Utica and these families occupy fifteen thousand dwellings. There are a few apartment buildings, for practically the entire population is housed in detached residences or two-family homes. There are not any buildings of the tenement type. Rent rates are comparatively low in Utica.

Utica is two hundred and thirty-six miles from New York City and two hundred and two miles from Buffalo. It is located in practically the geographical center of the state and is commonly called the "Heart of New York State." It is but five hours from Utica to the seaboard and New England, Pennsylvania and New Jersey. It is only six hours to Ohio and to Canada, and so its geographical location is an asset.

Utica is served by six railways leading in every direction, by the New York State Barge Canal System and through improved public highways. It is doubtful if any other city of the same magnitude has better transportation facilities or even possesses the equal of Utica's.

The pioneer settlers, those who located in the Upper Mohawk Valley in the seventeen hundreds and those who came in the early part of the nineteenth century, were general farmers and grain raisers; but with the coming of the Erie Canal in 1825 they found that they could not compete with the grain farmers of the West, so in looking for a profitable agriculture industry they took up dairy farming. It is well they did, for in so doing they furnished Utica with another asset. It is now the greatest cheese market in the United States. It is the home of the famous Dairymen's League, a co-operative organization which pools and controls the sale of milk and which manufactures and sells milk and its products for the farmers of the surrounding country. This organization, which is rapidly extending over the eastern section of the

country, employs four hundred and twenty-five people at its Utica headquarters and does a business of almost eighty millions of dollars a year.

A city without a Chamber of Commerce is like an automobile without a steering wheel; it may run, but it will run at random. There are many things in the industry which can be better performed through collective action than they can be through individual effort. To correlate all these industrial movements so the greatest efficiency may be secured is the function of the Chamber of Commerce. Utica has such an organization with a membership of eleven hundred which fully represents the combined business interests of the city. The list of the standing committees, which includes one on industrial affairs, one on legislative affairs, one on municipal affairs, and a committee on transportation, is evidence that this organization of business men not only serves its members, but that it also serves the community.

The Utica Chamber of Commerce maintains offices in its own building, under the direction of its secretary, and employs a staff of ten people, including a commissioner of transportation and a credit bureau commissioner, who are constantly at the service of the members. The publication of the Chamber of Commerce, "Greater Utica," which carries this slogan at its masthead, "A monthly magazine dedicated to the City of Utica, its people, the hinterland, and those vast workshops and playgrounds of nature—the Adirondack Mountains and the Thousand Islands —of which region Utica is the logical metropolis," also proves that this great civic and industrial body is an asset to the city.

Not only does the Utica Chamber of Commerce serve the people of Utica, but it is organized to serve the general business interests of the country in giving to the public, the press, and to industries any information regarding Utica and the surrounding industrial district.

One cannot catalog all the ways in which the great luncheon clubs, such as the Rotary Club, the Kiwanis Club, the Exchange Club, the Kirotex or the Zonta Club serve the busy men who hold memberships in them, but if they did nothing more than pass on to each man some knowledge of how the other men work they would serve a great purpose. They do better than this—they keep alive the fine spirit of practical co-operation in helping one another. They do this wonderfully well in Utica, for this city has all these clubs and they form five distinct assets.

The Citizens Trust Co., Utica, showing its fine building at night, lighted by flood lamps. While this institution is among the youngest in point of time, it is in the front rank of financial houses in the Valley. This growth has come about through the relationship maintained with the public. It has striven to make its patrons feel free to talk over their problems and has endeavored to give to all a warm, friendly welcome

Among the obligations encumbent upon a city is the necessity of taking proper care of the sick, housing the destitute and protecting homeless children. That the City of Utica is meeting all obligations is attested by the institutions shown here. At the top is the Utica Orphan Asylum, next is the House of the Good Shepherd and at the bottom is St. Luke's Hospital

Back of the churches of Utica, back of the schools of Utica, the maintenance of the highways, the railway traffic, the parks, the homes and all the other assets are the manufacturing organizations.

There are four hundred plants in Utica, large and small. There are over eighty millions of dollars invested in these organizations and the production is valued at over seventy millions of dollars annually. These four hundred plants employ over twenty thousand workers and the combined annual payroll is twenty millions of dollars in round numbers.

What do the factories of Utica produce? In answering this question allow us first to say that the Upper Mohawk Valley is not a raw material center. Outside of milk from the farms which is worked into dairy products, some wood from not a great distance which is worked into paper pulp, and the raw power from the streams which is converted into quality power for the machines, the raw materials used in Utica have to come from other sections of the country and other parts of the world. Utica is a city of fabricators—men and women highly skilled in their respective crafts, who take these raw materials from other parts of the country and work them up into the highest quality of the common necessities of life.

Fishing rods are made in Utica and these rods are known throughout the civilized world. Fire-alarm boxes and police-call systems are made in Utica and so are metal emblems. One-tenth of all the knit underwear made in the United States is manufactured in Utica, and the leading brand of bed sheeting and pillow cases is also made in this city.

The manufacture of metal beds is one of the leading industries and the best-known bed springs in this country come from the city on the Mohawk. "Utica" is stamped in on nippers and pliers which come from the largest factory of the kind in the world and which go to every part of the world. Phonographs and phonograph cabinets are made in Utica, so are firearms, deep-drawn pressed metal work and cutlery.

Utica manufactures textiles—not in one factory, but in a large number of factories, and Utica also manufactures heating systems. The largest castiron steam boiler for heating purposes in the world is in Detroit, Michigan, but it was made in Utica, as are hot-water and steam-heating systems and hot-air furnaces in both pipe and pipeless types.

Clothing is made in Utica; special, trade-marked brands, the kind purchasers call for by name, the kind in which quality must be always the same and always the highest.

A number of other products just as widely different, one from the other, as those listed, are made in this industrial center and shipped to markets a few miles or thousands of miles from the place of production.

Almost any fabricated or manufactured article common to commerce and sold on merit of highest quality can be economically produced in and profitably marketed from Utica.

A large number of the four hundred industries in Utica are extensive plants, some of them counting their occupied property by acres, and all of them represent the best

This large and attractive building is the home of the Utica Lodge, B. P. O. E., which live and friendly organization numbers among the membership a large body of those Uticans who believe in a better city, a more progressive city and a more attractive city. To this organization is also due a large part of the charitable work carried on within the community. One cannot find in this city another group of men which possesses more enthusiasm for a greater Mohawk Valley than the Elks. A striking illustration of their thoughtfulness of the poor children of Utica is their annual Christmas tree, holding a gift of usefulness for each of the children. It costs a goodly sum and is financed within its own membership. Visiting Brothers to this lodge find a ready welcome and a warm greeting awaiting them as well as a spirit of true good-fellowship

practice in modern scientific production methods.

Utica is not a boom city, has never been a boom city, and never will be. It has reached a place industrially where the fundamental line of its growth has taken a higher curve and so it will appear to have a more pronounced increase in population in the future than it has in the past.

Other factories will come to Utica. They will come from other locations because they find in Utica all the essentials which exist where they are now located and other essentials, necessary to successful manufacturing, which can be found only in Utica.

Practically all of these factories will manufacture products which are not now made in Utica, and so they will bring a new class of skilled workers into this city and aid in giving the city a balanced market for labor. Other factories will be built in Utica to produce articles of commerce which are not manufactured at the present time in the Upper Mohawk Valley and these factories will be built by the business men of this city.

The business men of Utica and the people of Utica know the assets ring one hundred per cent. They know that practically any manufactured product of superior quality for which there is a demand cannot only be made in Utica, but it can be economically marketed from Utica.

The greatest thing in business is the value of the idea. There is a man in Utica who will have the idea that he can make a certain product and find a market for all he can make. He is going to chart his plan, establish his facts, secure the capital and start a factory in Utica. The value of the idea will prove its worth. The industry will grow; it will in time employ hundreds, or even thousands, and so Utica will grow. Another man will have an idea; in turn, he will prove its value. Capital, created by the first industry, will help establish the second, and so Utica will keep on growing industrially and in population. This is the law of business and Utica and Uticans will make use of this law.

Here, within their own city, the men of business will be locating new industries by design, for when they investigate the details of location they will find their own community meets all the requirements.

Slogans such as "Utica, one hundred and eighty thousand by 1930," or "Three hundred thousand people in Utica in 1940" will not keep Utica a great manufacturing center or continue to make it a greater manufacturing center, but the assets of the city will give it a slogan which will be internationally known and it will be: "The Heart of the Greatest Industrial District in the United States."

Back of the industries of Utica are the banks of Utica. This city has nine financial institutions which will compare favorably with those of any other city of the same class in the country. These nine financial organizations which serve the one hundred and four thousand people, the four hundred industries and the merchants of Utica have a combined capital of four million eight hundred thou-

The Utica City National Bank, Utica, which offers to its patrons every accommodation in modern banking

The State Masonic Home at Utica comprises about 120 acres of ground upon which is also located the Soldiers' and Sailors' Memorial Hospital and the wonderful old chapel of Colonial architecture. This institution takes care of aged and infirm Masons and their dependents. The hospital was built to fill a need and dedicated to the World War heroes. It costs in excess of one million dollars a year to maintain this home. Lodges from all over the state send their members and families by trainloads to visit this institution. One of the rare treats enjoyed by the excursionists is the music rendered by the children's band of the Masonic Home. This feature is in keeping with the other inviting attractions which this well-known institution affords. Visitors to Utica should not leave this show place off their list of things to be seen, as its beautifully kept grounds and buildings are well worth seeing

These Clubs of Utica play an important part in the lives of the citizens and the business of the community. The illustrations show the homes of the Women's Civic Club, Catholic Women's Club, the Moose Club, the New Century Club, and the Fort Schuyler Club

The John A. Roberts & Company Department Store, Utica, in which one can find the latest models and modes of Fifth Avenue and Paris

sand dollars, a surplus of six million two hundred and eighty-five thousand dollars and have over seventy-four millions of dollars on deposit. The business man knows how to read into those figures the financial soundness of the community and is capable of realizing that these banks and trust companies are in a position to successfully perform the manifold functions through which they serve the public by stabilizing business.

It may be that, in this conversation-in-type, we have omitted other assets of Utica, New York, but when you come to Utica you will find that every essential to the social and commercial life of a great community is here.

Rome, New York, is the second city in size in the Upper Mohawk Valley. The Federal Census of 1920 credits Rome with a population of twenty-six thousand three hundred and forty-one; anyone who has visited Rome during the past two or three years and studied the industrial advancement of this city will be willing to admit that there will be a marked increase shown in population when the Federal Census for 1930 is published.

Rome is situated at what was once the head of navigation on the Mohawk River and is the most westerly city in the Valley. The Indians called the place where the city now stands Deiwainsta or "The place where canoes are carried from one water to another," while it was known to the early settlers as "The Oneida Carrying Place," for at this point it is only a mile or so from the Mohawk River to Woods Creek. Thus it was comparatively easy for the Indians and the whites to make a portage with their canoes, bateaux and loads from one stream to the other. Woods Creek flows into Oneida Lake, and other streams flowing westward and northward from the lake furnish a practically continuous route from the Hudson River to the Great Lakes. This location at the portage was one of great strategic value and so the British built two small forts at what is now Rome in 1725. In 1760 General John Stanwix built a fort, at a cost of sixty thousand pounds, and called it Fort Stanwix, and thus it is spoken of in the history of the French and Indian Wars. It was at this fort, on June 14, 1777, the first Stars and Stripes, the Sign of our Nation, was raised. The first flag of what is today the emblem of one hundred and twenty millions of people was carried at the Battle of Oriskany, in which the soldiers from the fort, rechristened Fort Schuyler, participated.

Rome is a busy city. Five thousand five hundred of the people of Rome work in the some sixty industries and receive an annual wage of over five million five hundred thousand dollars. These industries require a capital of over thirty millions of dollars and the annual output is valued at thirty-five millions.

The manufacturing interests of the city, the retail stores and the professions, the people in general, and the farmers of the surrounding country are served by four financial institutions. These banks and trust

Robert Fraser, Inc., Utica. The rise to fame of its founder is one of the romances of business. This metropolitan department store, perhaps the foremost in this part of the state, has a clientele distributed throughout the entire Mohawk Valley

The picture at top of page shows Utica in 1835, looking down Washington Street and Genesee Street from the "outskirts." At this time the chief mode of travel was the ox-team, or, at best, the horse, until one year from the date of the picture, on July 22, 1836, when the Utica and Schenectady Railroad was opened. About this time the city rapidly began to lose its frontier appearances and soon became the thriving City of Utica as shown in the center picture as it appeared in 1850. A section of the city as it is today, the city of industry, the rapidly growing city of 104,000 inhabitants is shown below. Utica expects to see greater changes in the fifteen years between 1923 and 1938 than occurred between 1835 and 1850

companies have a combined capital of five hundred and fifty thousand dollars, a surplus of one million eighty-five thousand dollars and over fourteen millions of dollars on deposit.

The reason we write "the farmers of the surrounding country" is because they are part of the industries of Rome, for many of the farms are devoted to the growing of vegetables which are packed in the canning factories of the city. Wherever the canning industry is conducted on a large scale, as it is in Rome, there is, necessarily, a demand for containers, and so the manufacturing of cans is another of the industries of the city.

Knit goods, hardware specialties, medicines, hoisting machinery, etc., are produced in Rome, but the outstanding industry, the one through which the city is known throughout the country, is copper and brass.

The people of Rome have placed a great sign where he who rides may read. This sign is erected on the bridge which spans the Barge Canal and over which the automobiles entering Rome must travel. The New York Central Railroad's celebrated four tracks pass close to this sign, and, as the sign is illuminated, it may seen by night as well as by day. Countless thousands learn to know that "Ten per cent of the copper used in the United States is manufactured in Rome."

What the manufacturers of Rome make out of copper and brass is best told in the great commercial directories and handbooks. If you turn to electric wire you will learn that it is made in Rome. If you turn to sheet brass you will see that it is made in Rome. If you inquire for copper in sheets or copper fabricated into kettles you will find it is manufactured in Rome. Copper and brass are common to other industrial centers as well, but the manufacturers of Rome undoubtedly do more with these metals than is done in any other community.

Rome is on the main line of the New York Central Railroad, the nation's great water level east and west transportation system; the Rome Watertown and Ogdensburg Division of the New York Central; the Rome and Clinton Branch of the New York, Ontario and Western Railroad, and the New York State Barge Canal.

Rome is two hundred and fifty-one miles from New York City; one hundred and nine miles from Albany; fourteen miles from Utica, and one hundred and eighty-eight miles from Buffalo. It is connected to every other city and to every other town and village in the United States and Canada through the unequaled transportation facilities of the Upper Mohawk Valley and is directly linked with Utica through an electric interurban car system.

The people of Rome, through their Chamber of Commerce, stand ready to welcome other manufacturers and other workers to this rapidly growing industrial center. The people of Rome are doing their part in making the Upper Mohawk Valley the greatest industrial center in the United States.

And why the name Rome? The historians tell us that in 1796 Rome was made a township and was given the name because of the heroic defense of the country made here during the Revolutionary War.

Little Falls is called the Rock City. It is situated on the sides of the hills through which runs the Mohawk River and forms as picturesque a community as can be found in

The headquarters of the United Commercial Travelers, United Commercial Travelers' Building, Utica. This organization has a membership of over 250,000

the United States. The river at Little Falls descends forty-five feet in a distance of half a mile and forms the falls and rapids. The crystalline rocks, which form the gorge through which the river runs, are of the oldest rock formation of the earth. Geologists tell us that these rocks belong to the Laurentian formation and the Archaean system. It is possible that these rocks were in existence before there was any animal or plant life on the globe, and some authorities claim they formed part of the original crust of the earth. This is why Little Falls is called the Rock City and why it has every right to the name.

This city is thirty-seven miles from Rome and is the most easterly city in the Upper Mohawk Valley. The day is not far distant when Little Falls and Rome will be as one, for the territory between will be covered with manufacturing industries and the homes of the workers.

Little Falls is twenty-one miles from Utica, seventy-four miles from Albany and two hundred and sixteen miles from New York City. It is on the main line of the New York Central Railroad, the West Shore and Buffalo Railroad, is the terminal of the Little Falls and Dolgeville Railroad, has the New York State Barge Canal, and is connected with other cities and the towns and villages of the Valley through interurban electric cars and motor buses.

When you go into a drug store to purchase a package of junket tablets with which to prepare that delightful milk food, you are patronizing a Little Falls industry. When you buy a pound of butter it may be that you are indirectly contributing to the prosperity of Little Falls, for the machinery used in making the butter most likely came from the Rock City. When you buy one or another of the most celebrated trade-marked brands of underwear, it may be that the goods you are purchasing came from the city on the Mohawk, for the knitting industry here is well established, as is also the business of making machinery used in the knit goods and textile industry. When you watch a horseshoer at work it is possible that the hammer he is using came from this city, for thousands are made in one of the factories. When you buy a pair of shoes or a pair of gloves or any other number of articles made of leather it may be that this leather was fabricated in the great tanneries at Little Falls, for they make all these articles of commerce and commodities of trade, as well as other products, in this city.

Of the fourteen thousand people in Little Falls, over four thousand work in fifty industries and receive an annual wage of over four millions of dollars. The annual output of these factories is valued at over twenty-five millions of dollars and twenty millions of dollars is invested in the capital of these industries.

The banking and trust organizations, of which there are two in the city, have a combined capital of four hundred and fifty thousand dollars, a surplus of five hundred and fifty thousand dollars and deposits of some seven millions of dollars.

Little Falls has location and transportation and power. It is in the Upper Mohawk Valley, that great industrial district which is to become the greatest industrial section of the United States.

The Mohawk Valley, from a geographical standpoint, is a comparatively narrow valley, as ranges of hills to both the north and south of the river hold the valley to lands which are only a few hundred feet to a few miles from the water course, but the industrial

The Community Christmas Tree in Steuben Park, Utica, bore a message of goodwill toward one and all. The thought prompting the activity of a Community Tree is a prevalent one in Utica. The school children gathered around it and sang "Peace on earth, goodwill toward men"

Gas-Fired Core Baking Ovens of the Utica Heater Company, Whitesboro. Gas, as an economic heating fuel, is becoming increasingly used. The baking of sand and clay cores for foundry use is a very important part of the business, as poorly baked cores cause a large percentage of foundry scrap. Hence a steady temperature is essential. Gas is rapidly replacing coal and crude oil in this field

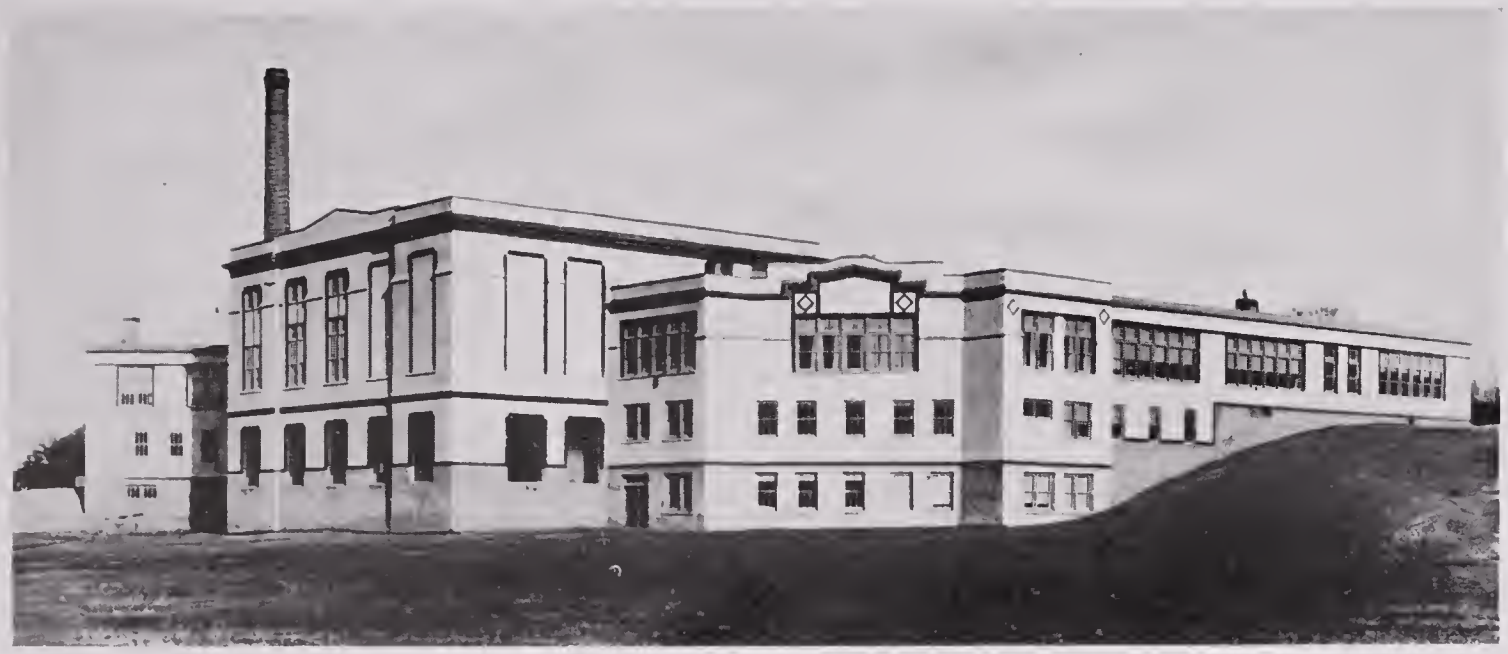
Spinning Room, Standard Silk Company, Chadwicks. This enterprise is one of the largest silk mills in the country. Fabricated silk production requires highly trained operators and a great amount of delicate and intricate machinery. This machinery must be driven by a very steady power supply; irregularity of speed, due to unsteady flow of current, would do much damage by breaking the threads

Polishing Room, Union Fork & Hoe Company, Frankfort. This concern makes a high-grade line of farming tools and implements. Most implements of this nature are cast from metals or forged and, in order to prepare for market, must be ground, buffed and polished. This necessitates a large amount of machinery which requires a quantity of dependable current

Power Compressors, electrically driven, in operation in the plant of the Clayville Knit Company, Clayville. The Mohawk Valley, being amply supplied with electric power and possessing an untold amount of latent, undeveloped power, has everything to offer the manufacturing interests which are on the alert to locate where production costs are low

Glazing Jacks in the Barnet Leather Company, Little Falls. How many everyday things have you seen so far in this book? They are all Valley products

Finishing Room, Utica Steam & Mohawk Valley Cotton Company, Utica. It is here that the garments receive the last touches before shipment



The Utica Country Day School, New Hartford. This is a private institution with complete physical equipment, modern in every detail, and with an adequate staff of competent teachers

Mohawk Valley covers a much wider range of territory.

Communities of which Dolgeville, Clinton and Sauquoit are good examples, while not in the Valley of the Mohawk, are part of the same industrial group as the cities and towns which border the famous stream. They share in the essentials—location, transportation, power—and contribute in turn to the general prosperity of the entire district. The geographical Mohawk Valley is only a few miles wide, but the industrial district is some thirty or more miles in width, and it is of this industrial section that we are writing.

There are four towns between Utica and Little Falls which are located in the geographical, the historical and the industrial Mohawk Valley. They are Frankfort, Ilion, Mohawk and Herkimer.

Geographically, Herkimer is located on the Mohawk River, fourteen miles southeast of Utica, two miles from Ilion and seven miles west of Little Falls. It is an old community, part of what was once known as "German Flats," as it was settled by the Palatines in 1725; and a stone house was built by John Jost Herkimer, from which the village takes its name. Herkimer is the county seat of Herkimer County and is the market center of a rich dairying region. It is also a manufacturing community. Its principal products are office and library furniture, hardware specialties, gloves and paper boxes. Its industries, thirty-five in number, employ one thousand five hundred workers, who receive an annual wage of one million five hundred thousand dollars. The annual output of these factories is valued at four millions of dollars and they have a capital investment of a similar amount.

Herkimer has two banks with a combined capital of three hundred thousand dollars, a surplus of three hundred and sixty-four thousand dollars and deposits of three million and ninety-five thousand dollars.

The village is on the main line of the New York Central Railroad, the Adirondack Division of the same system, the Otsego and Herkimer Railroad and the New York State Barge Canal.

Between Herkimer and Ilion is the village of Mohawk, which is the home of about three thousand people. It is on the New York Central Railroad, the West Shore and Buffalo Railroad and the Barge Canal. The manufacturing of underwear is the principal industry.

Ilion, a village with a population of over ten thousand, is twelve miles from Utica and nine miles from Little Falls. This is another place where the Palatines settled in 1725, but it was not until the coming of the Erie Canal, nearly one hundred years ago, that it became a village.

The people of the Upper Mohawk Valley are justly proud of the traditions of their country and the contributions of the famous men of the Valley to the progress of civilization. These people of the central section of New York State have not only preserved the old landmarks of the pioneer days, but they have built monuments to the memory and deeds of those who served the community or nation. At Ilion, however, is the greatest

New York Mills is a one-industry community a few miles from the City of Utica. The village takes its name from the large textile plants of the New York Mills Corporation here located, and the Oneida Bleachery, Incorporated, shown in the picture, is one of the allied industries. These industries require a large amount of power and so, to be in a position to supply at all times the demand for the highest quality power to these factories, the Utica Gas & Electric Company has erected a substation in this village. These allied industries with thousands depending upon them for employment are not only an asset to the Upper Mohawk Valley, but through the high quality of their products are an asset to the nation

The mammoth plant of the Rome Brass & Copper Company, Rome. This firm is a large user of both gas and electricity for industrial purposes. It manufactures a large number of brass and copper articles, besides bars and bulk material. Copper and brass in its many different forms, shapes and uses play an important part in the world's business. They are perhaps as necessary as any two metals known to mankind. It is fitting that the Mohawk Valley, the mother of a large part of American development, should continue to supply those things so needful to her continuous growth

View of the factory of the Utica Cutlery Company, Utica. It is the aim of this concern to make Utica knives known to every man and small boy in America—it has already gone a long way toward this end, as the size of its factory buildings and the number of skilled workmen in its employ will prove. The line of pocket and pen knives made by the Utica Cutlery Company is famous throughout this country and in foreign lands. The commercial success of this company and the diversification of its product from other lines made in the Valley is proof that any high quality product can be profitably manufactured in this industrial district

Rome Trust Company of Rome, New York
Deposits $4,140,000

First National Bank, Dolgeville, New York
Deposits $1,200,000

Utica Trust and Deposit Company, Utica, New York. This is another of the larger financial institutions of the state

Manufacturers National Bank, Ilion, New York
Deposits $1,500,000

First National Bank of Utica, Utica, New York, founded in 1812 as the Bank of Utica and later named First National, has been in continuous business since that time, a period of one hundred eleven years. It is the oldest bank in Central New York

monument dedicated to a man which may be found in the Valley, for it was erected little by little for a period of over one hundred years and is not yet finished. Millions of people throughout the world have contributed to the building thereof. This monument is the allied industries which bear the name of Remington and these factories stand to the memory of Eliphat Remington. Just south of the village, on the beautiful Ilion Gorge Road, the Daughters of the American Revolution have placed a tablet which marks the spot where Eliphat had his first forge, but the great works in the town are the finest monument which can be built to the memory of a man, for they not only stand as a sign of industry, but they are industry itself.

In five more years the Remington Arms can celebrate its one hundredth anniversary and in one more year the Remington Typewriter will have reached its fiftieth birthday, while the Remington Cash Register belongs to our own time and is of recent development.

Ilion is not a one-industry town by any means. The best known filing systems in the world are made at Ilion and a large illuminated sign tells the great traveling public that this celebrated industry is part of the Upper Mohawk Valley.

All told, Ilion has fifteen industries, requiring eighteen millions of dollars in capital, having an annual output valued at fifteen millions of dollars and employing six thousand five hundred workers, to whom are paid six million five hundred thousand dollars annually.

The homestead of a great industry. Here is the first cheese factory in this region. As you perhaps know, this section of New York State, called the Mohawk Valley, leads the United States in the manufacture of cheese. Utica is the largest cheese market in this country

City Hall, Little Falls

Ilion has two banking institutions with a joint capital of one hundred and fifty thousand dollars, a surplus of one hundred and fifty-six thousand and deposits of two million eight hundred and sixty-seven thousand dollars.

The main line of the New York Central Railroad; the New York, West Shore and Buffalo Railroad, and the Barge Canal furnish Ilion with adequate transportation.

Over four thousand people live in Frankfort, which virtually joins Ilion on the west. The same railroads serve the two villages and both have the highest quality power service, which will prove one of the forces that will make the Upper Mohawk Valley the greatest industrial center of the United States.

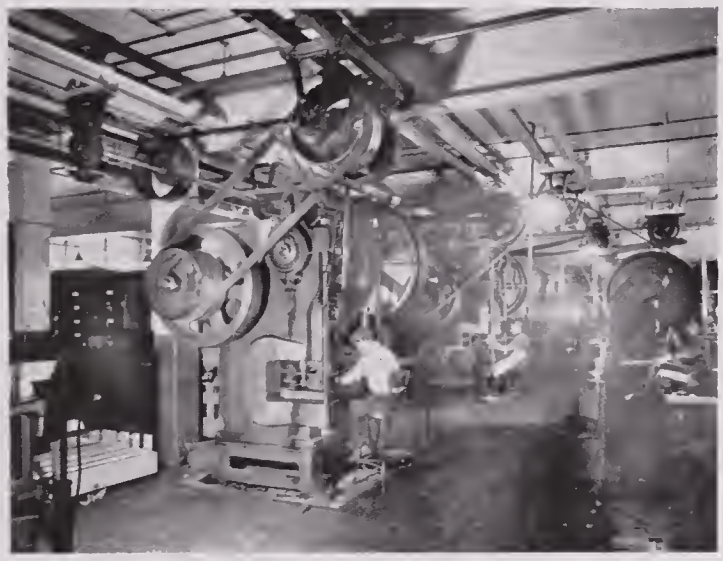
Forks and hoes of every description and for every purpose are made at Frankfort, as is also road-building machinery.

Whitesboro is the first community west of Utica and it is difficult for the visitor to the Upper Mohawk Valley to tell where the city ends and the village begins, for only a street marks the dividing line. Whitesboro of the present day has a population of about three thousand, but there was a time in the history of the Valley when the forecast of the day would have predicted that Whitestown, as it was then called, would some day become a city, while the few log houses at what is now Utica would grow to be a village at the Ford of the Mohawk.

Then the one great need of the pioneer days and one of the essentials of the present day transportation, in the form of the great East and West Turnpike, came through the Gateway of the West at Little Falls, crossed the

Automatic power-driven machinery in The Ralway Silk Corporation, Yorkville. The United States is produeing more and more of its silk, as American inventive genius supplies the neeessary maehinery to supersede the old hand methods of the Japanese and Chinese, which were too expensive to be used generally

You ean see the neeessity of power from this pieture, taken in the Machine Grinding Department of the Utica Cutlery Company. These machines are praetieally automatic, hence reducing the eost and produeing a maximum amount of the highest-grade work. Such maehines attain their maximum effieieney through highest-quality power



A corner of the Punch Press Room of the Remington Cash Register Company. These presses are used in the making of the eabinet, keys and faees of the nationally known Remington Cash Register

Utiea Valve & Fixture Company, makers of valves, faueets, plumbing supplies and fixtures. The seene is in the Grinding and Polishing Room. You ean see the brass faueets in the trays

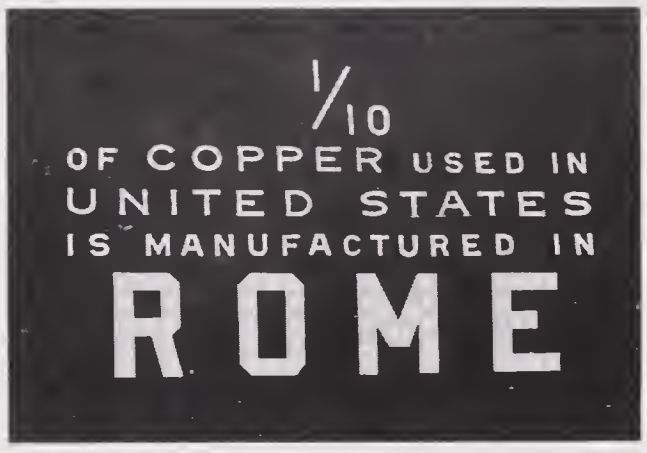
Typewriter carriage assembly to typewriter at the Remington Typewriter Works, Ilion. Think of the part played in the world's business by the lowly typewriter, then remember that power, and, more specifically, electrie power, has made this possible

Dryers in the plant of the Utiea Willowvale Bleaehery. Willowvale, showing the receiving end. The cloth passes through and between these big, heated rollers. After completion of the whole process it eomes out snowy white and ready for the market

Mohawk River to the Ford, continued on through Utica, forming what is now Genesee Street, leaving Whitesboro to one side of the main line of travel.

The names Whitestown and Whitesboro will stand forever, not only in the histories, but in the titles and deeds to the property of one-half the area of New York State, for this village was once the county seat of a vast territory.

Whitesboro has a place in the history of the past and it cannot be denied a place in the history of the future. The highest quality of power, which, with geographical location, unequaled transportation and available land, will make the Upper Mohawk Valley the greatest industrial center of the United States, will cause Whitesboro to grow toward the west until it meets the development of Rome and Oriskany toward the east.



You, too, can "tell the world" in electricity

There are a large number of factories now located at Whitesboro manufacturing knit goods, furniture, sash and doors, metal products, etc.

Whitesboro is on the main line of the New York Central Railroad, but it is so close to the City of Utica that it has the shipping advantages of the other great transportation lines of the Upper Mohawk Valley.

There is one attribute common to Whitesboro, Little Falls, Dolgeville, Rome and all the other cities, villages and towns of the industrial Upper Mohawk Valley and that is the possession of a marked substantiality. This undoubtedly comes from the fact that these communities, individually or collectively, are not the result of a boom or booms or any organized effort to produce a forced industrial growth.

While there is every evidence of industrial progression, there is also the balancing influence of social conservatism, or, as the head of a large trust company phrases it, a conservative progressiveness. There is not a tendency in the Upper Mohawk Valley to disturb the existing order. The church, the school, the home and the day's work are still the most important considerations of life. There is something to all these communities which makes one feel that they have long been organized and are well established. There is not a mad rush to build a babel to reach the unattainable, but a constant, steady effort, backed by understanding, to develop these communities on sound lines and through practical methods.

Paper, felts and malleable iron products are manufactured in Oriskany, a village of about one thousand people located on the New York Central Railroad, seven miles from Utica and about half way between Rome and Whitesboro. In a ravine, near the village, the Battle of Oriskany was fought on August 6, 1777. An obelisk on the hill has been erected in commemoration of the deeds of the Herkimer County militiamen who died to make us a free people.

Northeast of Little Falls, and connected with the city by the Little Falls and Dolgeville Railroad, is the village of Dolgeville. Situated on the East Canada Creek, near the High Falls, and in the foothills of the Adirondacks, Dolgeville is as picturesquely located a village as one could wish to see. That the beautiful and the industrial can go hand-in-hand is proved by the factories of the village, for here are made felt shoes, which are sold under trade-marked brands and known throughout the United States and Canada, sounding boards and other piano parts.

Over three thousand five hundred people make their homes in Dolgeville, and the prosperity of the village is indicated in the reports of the bank of the village which has a capital of one hundred thousand dollars, a surplus of one hundred thousand and deposits of over one million two hundred thousand.

Just below the village and at the High Falls is the Dolgeville Station of the Utica Gas & Electric Company, so Dolgeville and the neighboring villages are assured of an abundance of the highest quality power, not only for the present industries, but for all the factories which will locate here in the future.

New York Mills is a one-industry village, but, like the other villages of the Upper Mohawk Valley it differs greatly from the

A residential street in Barnereld. An attractive village, enhanced by beautiful trees, located in the hills to the north of the Mohawk

Methodist Episcopal Church, Prospect. Attractive churches, many of them old historic structures, are to be found in the villages of the Upper Mohawk Valley

"Men may come and men may go," but the road goes on forever. Up hill and down dale is the course of the roads in the district which borders on the Mohawk and its tributaries. This street in Hinckley is typical of the beauty of the district

In a land so favored by Nature, so full of beauty and peace, a man can live and, living, enjoy life. Who would not appreciate a home in such a charming location as this residence at Barnereld

one-industry communities to be found in other parts of the country, for the village has all the industrial essentials and all the social and civic essentials which are to be found in large centers; and the New York Mills Corporation, the one industry, is thriving and dominant and is one of the largest textile manufacturing concerns in the world.

This village is typical of a class of which there will undoubtedly be many more in the Upper Mohawk Valley in a comparatively few years, as a large number of manufacturers, not located at the present time in the district, will find it to their advantage to move their plants from congested manufacturing centers to where there are all the attributes for economical and profitable manufacturing and where there is an abundance of available land which can be secured at fair land valuation prices.

South of Utica and adjoining the city is the village of New Hartford, a community of fifteen hundred people. South of New Hartford, in what is known as the Sauquoit Valley, are five other villages: Washington Mills, Chadwicks, Sauquoit, Clayville and Cassville. Southwest of Utica is Clinton, while to the north are Stittville, Holland Patent, Barneveld, Trenton, Prospect, Remsen and Hinckley.

At Washington Mills, which is on the Delaware, Lackawanna and Western Railroad,

The building and offices of the Herkimer County Trust Company, Little Falls

The Hotel Richmond, Little Falls. Here one will find the best in hotel accommodations

five miles from Utica, special chemicals are manufactured.

Chadwicks, also on the Lackawanna, is the home of large knitting mills. At Sauquoit there are other knitting mills, while Clayville is also a knitting town. New Hartford, which is on the Delaware, Lackawanna and Western, the New York, Ontario and Western, and the New York Shore and Buffalo Railroads, has a large canning factory and also a factory which produces gauze bandages.

Clinton, on the New York, Ontario and Western Railroad, about ten miles from Utica, is the site of Hamilton College. It is an attractive village, having a population of about one thousand four hundred, and manufactures canned goods, textiles and paints. Waterville, to the east of Clinton, produces textiles, and has canning factories and foundry and machine plants. Hinckley, Remsen, Holland Patent, Trenton, Prospect, Salisbury, Salisbury Center and other villages which lie to the north of the Mohawk Valley are principally farming community towns. Hinckley has a large paper mill, located near the great Hinckley Reservoir, while there are quarries at Prospect. The one great industry of this beautiful north country is the dairying; and so the villages furnish the stations to which the milk is brought by the producers to be shipped to the consumers or to be turned into milk products.

Altogether we have a district of a thousand square miles or more, containing some

The Corners at Cassville. Another one of the villages of central New York State made naturally attractive through its shade-tree lined roadways

The Methodist Episcopal Church at Sauquoit. From old churches like this the old-time circuit riders went forth to serve the less settled communities

The High School at Holland Patent. The picture below shows a quaint, old village, but progressive people live in such places and appreciate all the advantages of modern educational methods. Witness this school building

Industry always contributes to beauty, though some there be who cannot see it. The boom at the Hinckley Fibre Company forms an attractive view, and with the hills in the distance is a picture worth seeing

The Village Park, Holland Patent. This park of forest trees and the surrounding buildings should make the people of many large cities realize the real value of open spaces in community planning. It is here the people of the village gather of an evening to listen to good music by the band. You can see the stand to the right

Comprehensive views of the Daniel Green Felt Shoe Company, Dolgeville; also showing a portion of the town. This million-dollar corporation manufactures the famous Daniel Green Felt Shoe, known the world over

cities, towns and villages, ranging in size from Utica, with one hundred and five thousand people, to Prospect, with about three hundred people.

There are about six hundred manufacturing organizations, large and small, in this district. Close to forty thousand people work in these plants and earn an annual wage of forty millions of dollars. The capital required to operate these plants is at least one hundred and seventy-five millions of dollars, while the total annual output is well over the one-hundred-and-fifty-million-dollar mark. The banks and trust companies of the cities, towns and villages of the industrial Upper Mohawk Valley have a combined capital of over six million six hundred and fifty thousand dollars and there are over one hundred and seven millions of dollars on deposit.

This is the industrial Upper Mohawk Valley as it is today. Now, let us consider what the people of this industrial Upper Mohawk Valley, with all the tangible assets and all the essentials for expansion, can do to make this the greatest industrial center in the United States.

The first thing necessary is to get ready to grow. The one thing needful on the part of all the people is vision, and vision can only come through understanding.

The major part of the industrial growth of the Upper Mohawk Valley will come from the inside and will not be a great deal more pronounced at any one point than it is at another. The minor part of the industrial growth will come from the outside and be distributed throughout the Valley just as the present industrial assets are distributed; but, because this distribution will be done by design and far more scientifically, it will be more uniform.

The major part of the industrial growth of the Upper Mohawk Valley will come from the inside in the same manner that the future industrial growth of the City of Utica will come from the inside. Men who are now engaged in manufacturing in the Upper Mohawk Valley will see the market for a given product and will start the manufacture thereof. Other

The H. Cheney Hammer Corporation, Little Falls

One is at a loss for words to fittingly deseribe the majestie beauty of such a seene. Nature has poured out her grandeur with a larish hand in this region of the Upper Mohawk Valley

Trenton Falls Early in the Morning

Would you the genius of the place enjoy,
In all the eharm eontrast and eolor give?
Your eye and taste you now may best employ,
For this the hour when minor beauties live;
Sean ye the details as the sun rides high,
For with the moon these sparkling glories fly.

Trenton Falls in the Afternoon

A ealmer graee o'er these still hours presides,
Now is the time to see the might of form;
The heavy masses of the buttressed sides,
The stately steps o'er whieh the waters storm.

Trenton Falls by Moonlight

With what holiness did night invest
The eager impulse of impetuous life,
And hymn-like meanings clothed the waters' strife!
With what a solemn piece the moon did rest
Upon the white erest of the waterfall;
The haughty guardian banks, by the deep shade
In almost double light are now displayed.
Depth, height, speak things whieh awe, but not appall,
From elemental powers this voiee has come,
And God's love answers from the azure dome.

—Margaret Fuller

Chr. Hansen's Laboratories, Little Falls, makers of the famous Junket Tablets. Who is there who has not used the product of this plant?

men, some of them in minor positions at the present time, will invent or create a product for which there will be an extensive market; and, while some of them will start in a small way with limited capital and build great industries through their own unaided efforts, others will see that the best way for them to prosper is to place the merits of their several products before men who are able and willing to furnish capital and thus start manufacturing on a fair size basis at the beginning.

These new industries, while conceived and founded within the Upper Mohawk Valley, will need a great many thousands of workers who will come from outside the Valley and so the communities of the Valley will grow and show decided increase in population.

The minor growth will come from the outside; and, because we use the word minor, do not think that the growth from this source will be insignificant. It will not. A large number of manufacturers who for one reason or another are seeking ideal locations and ideal industrial conditions will move their plants to the Valley. Other men, from outside, will see the value of the district as an industrial center, locate in one of the communities, start manufacturing in a small way and out of these will grow great industries employing thousands.

This is neither a forecast nor yet prophecy. It is the ordinary every-day process of the working out of the laws of life. It is the way all industrial communities grow and is the way the Upper Mohawk Valley will grow to be the great industrial center of the United States. With this district it is an assured fact, for all the essentials to industrial growth are here, and in greater abundance than in any other location not now congested beyond the point of economical production and distribution.

Business develops a language of its own, just as does science, sports, government or any other division of life. A few years ago the one great word in business was "efficiency;" and, though often misused, it still has a power and a meaning which not another word can supply. Then followed the word "service," and now we have "co-operation." If the Upper Mohawk Valley is to be the great industrial center of the United States, there must be a plan; if there is to be a plan there must first be a vision, because this plan will deal with the future, and the only way to all the facts which must form the vision is through the earnest co-operation of every interested organization.

This vision cannot be confined to a few men scattered here and there throughout the Valley, but must be possessed by the majority of the people, or, better still, by every man, woman and child in the Valley.

The Upper Mohawk Valley has a wonderful past, one of which every citizen of the Valley can be justly proud. True pride of worth allows us to glory in this past and we should always preserve the finest traditions of our fathers; but the past has gone, and its only value to us is that we learn from the successes of others how to succeed or through the failure of others what to avoid, for all of us fail at times in some way or another; so, we can profit from the mistakes of the pioneers.

The present is with us. Now is the time to take stock of things as they are; see what

The Savings Bank of Utica, Utica, "The Bank with the Gold Dome"

The High School at Clayville shown in the illustration to the left and the Ilion High School on the right are typical of the educational institutions to be found in the Upper Mohawk Valley

The attractive home shown in this picture is at Sauquoit and is of a type not uncommon to the district. Every section of the district has its beautiful homes and there is an abundance of homesites

The factory of the Clayville Knitting Company, Clayville. Many manufacturers, whose plants are situated in unattractive locations, are spending small fortunes yearly to beautify their factories and grounds. In the Upper Mohawk Valley Nature has laid the foundation in such manner that there is little room for improvement

we are doing so well that there is no room for improvement; see what we are doing well, but where a decided improvement can be made, and then make it; and then, see what we are leaving undone which should be done for the general interests of the Valley and the people of the Valley as a whole.

It is a foregone conclusion that the commercial bodies of Rome, Utica and Little Falls and the commercial organizations of the towns and villages, as well as the luncheon clubs in the district, will work together in an organized movement and with the finest co-operation. This is being done at the present time and it only means that the unified work will be extended as the occasions demand.

The people of the Valley can depend upon the business organizations of the Valley to work for the common good of every community. Business is always constructive, for every man knows that the law of the survival of the fittest always holds good.

If the Upper Mohawk Valley is to be the great industrial center of the United States, there must continue to be the same unified co-operation, not only between the commercial bodies, but as well the social organizations, the civic officials, as now exists. Nor is this the end of the possibilities, for it should extend to those matters of state and national legislation and administration which affect the general welfare of the people and the interests of the Valley.

Now, back to vision. If the forefathers had possessed the clear vision for which we give them credit, there would not be any need of a planning commission in Utica today. The streets would have been laid out and charted in such a manner that the city would have been supplied with main traffic ways which would have been adequate for all time to come; and, if the plan had been made on sound scientific lines, each succeeding generation would have followed the plan as the city developed. The present plan, to be of the greatest possible value to the public, calls for the unqualified co-operation of all the other communities.

Factories will come to the Upper Mohawk Valley. All the essentials are here. Now is the time to plan how the communities of the Valley can best serve the millions who will live in the Valley within another generation. This plan can only be carried out and maintained through the co-operation of every interest in the Valley. Stand ready to do your part.

Empire State Interested In Proposed Observance of Historic Events

(From Utica *Observer-Dispatch*, Sunday, April 8th, 1923)

A series of historic anniversary celebrations and pageants in which Utica and the Mohawk Valley is directly interested will be observed, if the worthy efforts of the Mohawk Valley Historical Association are realized. They were commenced last year. A Memorial recently submitted to the Legislature provides for state aid to permit of the observance of such historic events as may be deemed worthy throughout the state extending from Jamestown on the west to Long Island on the east.

The state is asked for small annual appropriations "to record anew New York's magnificent Revolutionary record," the sum to be spent under the direction of the State Historical Association, which would be authorized "to acquire and preserve historical buildings, monuments and places," and to hold celebrations and school exercises.

The Presbyterian Church, Clinton

The Savage Arms Corporation, Utica, showing a battery of motor-driven automatic lathes. Note that all leads are enclosed in conduits. Much has been done in recent years by the manufacturers in the interest of safety. They have come to know that anything improving the efficiency of their labor is too inexpensive to do without

The Knitting Room of the Springknit Underwear Company, Mohawk, showing spinning mules. It would indeed be a sight worth seeing if the pioneers of the Valley could come back and visit a modern spinning establishment as they exist today. Think how many spinning wheels would be required to produce the daily output of this plant

Knitting machines of the Duofold Health Underwear Company, Mohawk. Is it not wonderful that your "heavies" were made on such a machine and not by hand? One can hardly imagine how machinery can be made so almost human as to produce the shapes made necessary by demands of the trade, unless one has visited such a plant and seen it

Olympian Knit Goods Company, New Hartford, showing Finishing Department. Note the motors at the end next the aisle of each tier of machines. Another thing very apparent is the amount of cubic feet of air space per employee that these modern factories supply. The sweat-shop method has passed away. Science has reduced to a certainty this thing called "feet of space per person"

Showing the immense Weaving Room of the Standard Silk Company, Chadwicks. Imagine the yards of silk these machines can weave in a year and then you will appreciate how the busy little worms must work

The Finishing Department of the Utica Drop Forge & Tool Company, Utica. Here forgings and tools receive their final grinding and polishing before going to the Inspection Department

One-half of our present state area, now valued at one-seventh of the state's wealth and inhabited by one-fourth of its people, was, in 1784, the property of the Indians. In 1788 it was engulfed in Montgomery County and given the name of Whitestown. Today this area contains 30 counties, 31 cities, many villages and farms. Its population in 1920 was 2,766,266, of which 1,651,583 lived in the cities and 1,114,683 on farms and in villages. Its city wealth was $1,683,195,000; its village and farm wealth was $1,063,235,000, a total of $2,746,430,000, about one-seventh of the entire wealth of the state.

It is this area from which the Iroquois tribes (excepting the Oneidas and Tuscaroras) were led in pitiless expeditions, committing ghastly frontier horrors, which depopulated the homes of the frontier settlers. It is in this area that the Indian trails of these Revolutionary raids should be marked, and the record made that the whole state was revolutionary in fact and in territory.

Following Sullivan's expedition in 1779, which drove the Indians under the very shadow of Fort Niagara, New York State in 1786 made a compact with Massachusetts, whose claim to these same Indian lands had been smouldering since 1620, when the English Crown included them in an "ocean-to-ocean" grant to the Colony. By this compact New York secured the right to include them within her boundaries and Massachusetts the right to sell (subject to the extinguishment of the Indian title) and put the proceeds in her treasury. The quieting of the Indian title has been going on since 1784 and is not yet completed. The rights of Massachusetts are still asserted. Only the other day they brought a chuckle from Chief Justice Taft while on the Supreme Court bench, when the Court was asked in relation to the Windsor beach property near Rochester, on a question already over 100 years old, to advance the argument two months nearer to a hearing. Sullivan's raid and the Massachusetts compact were the preliminary steps to the most tragic event that occurred in this state. This was the act of the Legislature in 1788 when it extended the boundaries of Montgomery County around the ancestral homes of the Iroquois Indians and placed their 16,000,000

A view of the Manufacturing District of Little Falls, showing the Phoenix Mill in the left foreground, a corporation, manufacturing underwear, that is capitalized at over one million dollars

The huge electric sign of the Rome Wire Company, Rome. The use of electricity has entered the field of advertising and is filling a definite place in this sphere. No more effective way can be used than that of telling your message in electricity. "Get your name in the bright lights"

acres in the newly erected town of Whitestown, ever after to be governed and owned by the dominant race.

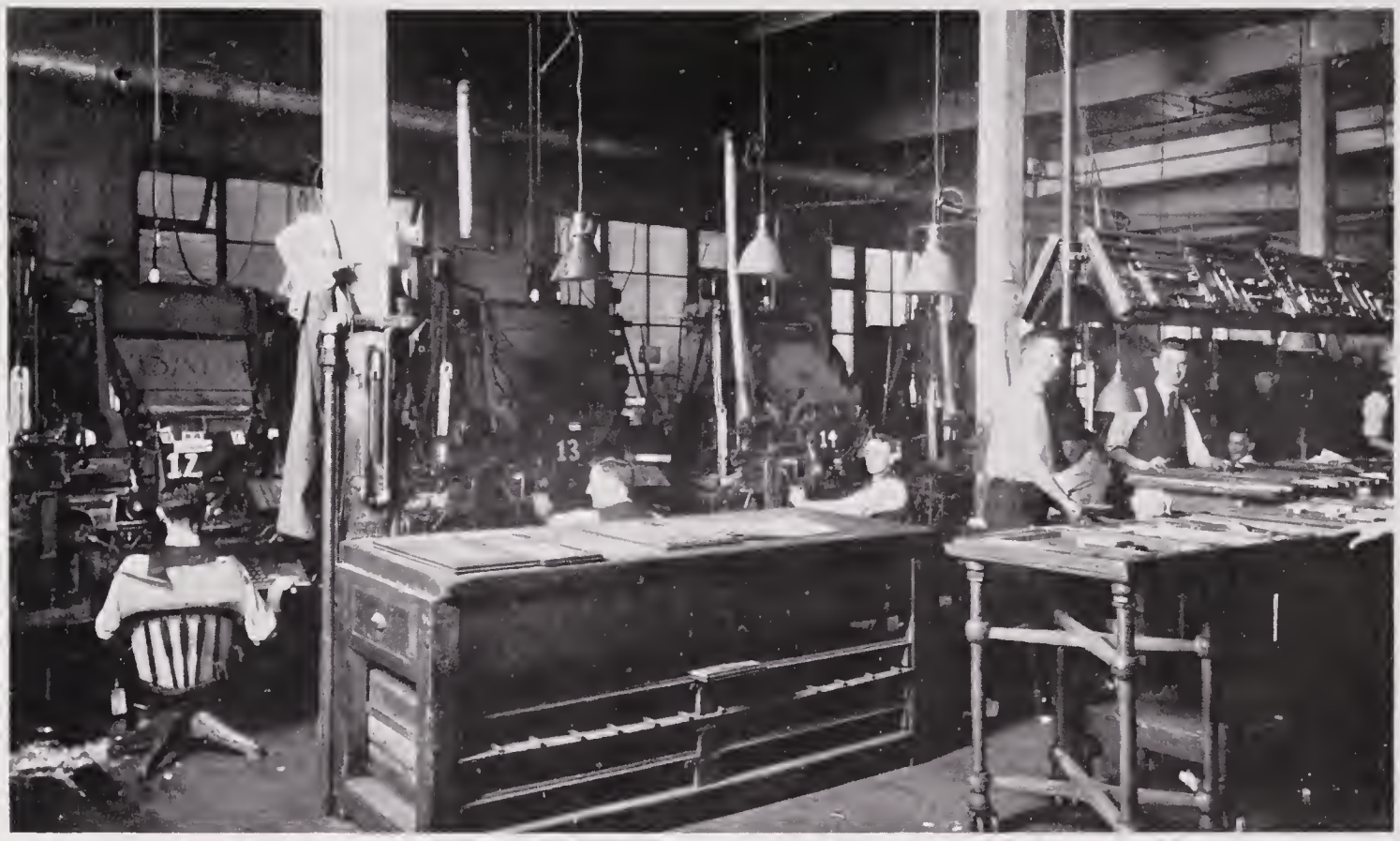
This act doubled the state's previous area, and gave notice to the Indians that there was no one to protect their rights as had Sir William Johnson.

When Sir William Johnson died, July 11, 1774, the most powerful figure of all colonial times in North America passed away. During the thirty-six years of his residence in the Mohawk Valley, he, more than any other person, secured and held the tribes of the Six Nations to their allegiance with England. With their help, Canada and the "West" were won from the French.

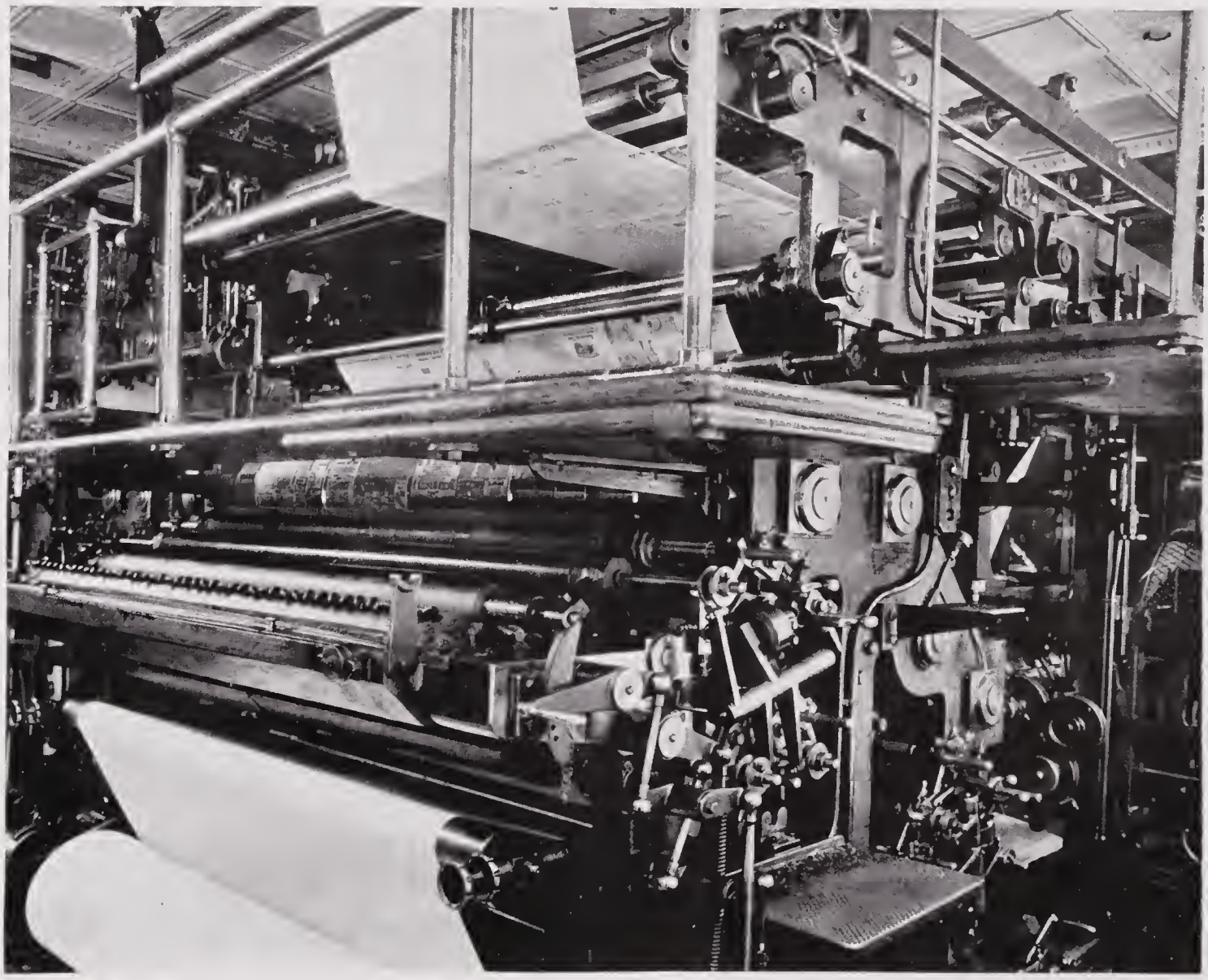
At the close of the eight years of our Revolution, England continued to hold Canada, while the "West" passed to those states which as Colonies had received charters with "ocean-to-ocean" grants. These states, subject to some reservations, ceded their interests in this area to the Union, until in 1787 it became the Northwest territory, to be later carved into states and added to the Union.

Whitestown was called after Hugh White of Middletown, Connecticut, who, with his five sons, on June 5, 1784, had taken possession of his interest in a patent which he and others had purchased at public sale on the attainder for treason of Hugh Wallace. This patent, which lay on the Mohawk River, with Cox's patent directly to the west, abutted upon the Indian property line and, with the Jellis Fonda patent, were the most westerly of the colonial grants in the province and the western extremity of Tryon County.

Tryon County was erected in 1772 to govern all the provincial area east of the "property line" and west of Charlotte, Albany and Ulster Counties, as then defined. Johnstown, which is now in Fulton County, was its county seat. In 1784 it was renamed Montgomery County because of the illwill borne by the patriots against William Tryon, the last of the Colonial Governors.



The Composing Room of the Utica Observer-Dispatch. In the background may be seen the linotype machines, which use gas for melting the blocks of type metal and which are powered with individual electric motors



The printing press of the Utica Daily Press. Electrically driven and practically automatic. The printing press has probably done more for the advancement of civilization than any other educational force, religion excepted

Less than 200 white inhabitants were to be found in the town of Whitestown when it was erected in 1788, and this count included traders and prospectors. In 1787 there were seven homes at Hugh White's settlement, five at Rome, three at Oriskany, three in Utica and three in Westmoreland—all log cabins, small and cheaply constructed.

By 1820 the population of the state, estimated at the close of the Revolution to be approximately 190,000, had increased to nearly 1,400,000, of which it was estimated that 1,000,000 were from New England. By 1859 Whitestown's original limits were carved into 30 counties, since which time no changes have been made. The 1920 census gives these counties a population of 2,766,266 and the state a population of 10,386,773.

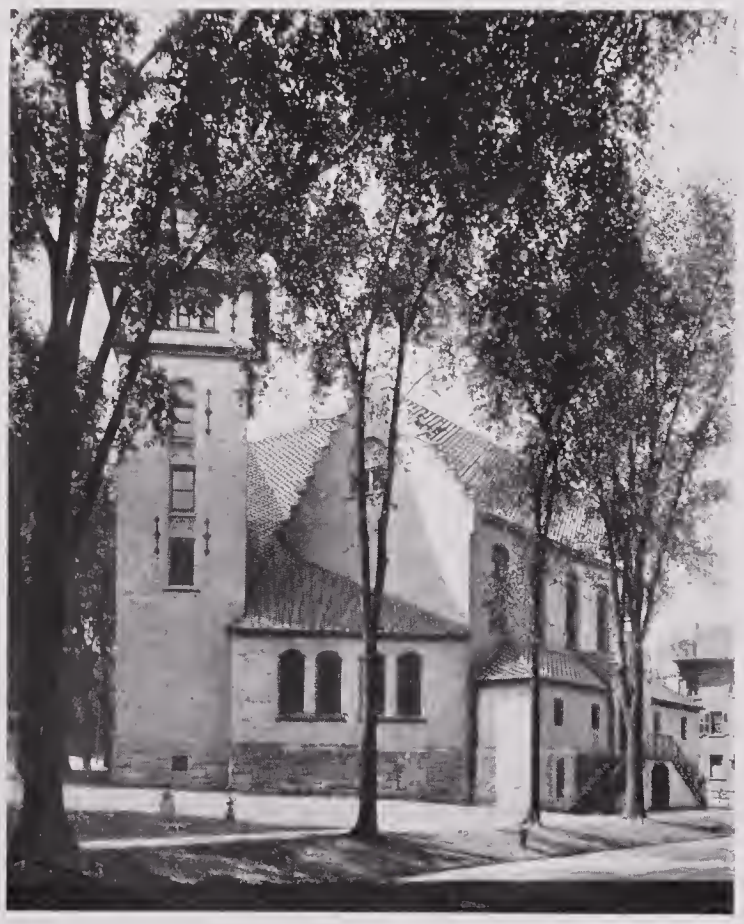
Some of the most romantic history of the French occupation led by Champlain at Onondaga in 1715 and followed by the erection of forts at Niagara and Oswego, and campaigns conducted over Lake Ontario, in which thousands of Indians in their canoes bobbed up and down upon the waters of the lake as they accompanied the vessels of their respective leaders, took place in the limits which were later assigned to the town of Whitestown. The same area was full of the Revolutionary records of the divided allegiance of the Six Nations during that period and the same forts were occupied by the British regular troops until 1796.

It took more than twenty years to induce the Indians at treaty gatherings to part with their title, and then only a part of the land was opened for settlement. The Mohawk Valley Memorial seeks a state and nation-wide recognition of the fact that the whole state was revolutionary in fact and in territory, and that the location of the Indian trails and raids should be marked as a part of our Revolutionary history before it is too late.

The Mohawk Valley Historical Association is a federation for historical purposes in the counties of Oneida, Herkimer, Fulton, Montgomery, Schenectady and Schoharie. It has formulated in broad outline a plan that should place New York State's history in the very forefront of accomplishment. It desires that the Oriskany battlefield be made a national park; that eight miles of the main route between Albany and Oswego, which passes through the battlefield, be improved; that $50,000.00 of state funds be available to celebrate in 1927 the 150th anniversaries of the battles of Oriskany, Bennington and Saratoga. That annual state appropriations, commencing in 1923, be expended by the New York State Historical Association in consultation with other historic and patriotic societies in preparation for recording anew New York State's magnificent Revolutionary record, by providing for celebrations, markers and school exercises covering the entire eight-year Revolutionary period, wherever situated in the state.

It urges the state to undertake the execution of a comprehensive plan regarding the erection of markers, memorials, and the proper recording of the state's history under three heads: First, the completion of the Colonial markers and records; second, the completion of the Revolutionary markers and records; third, the completion of all county and township markers and records, to the pioneer settlers and their first erected churches, schools, mills, stores, etc., that throughout the state there may be found proper tribute paid to all historic events which happened within our borders, from earliest Indian, French, Hugenot, Netherland, Walloon, English, Palatine and New England settlements that have at least 100 years of background.

The Oneida County Historical Society building in which are some of the most valuable records and relics in the nation's history



From 1775 to 1783 Long Island and the Champlain, Hudson and Mohawk Valleys furnished the battlefields for the 92 recorded conflicts that occurred in this state, providing an area full of continuous conflicts and ghastly frontier horrors. These battlefields of New York, surrounded by forests and closely confined to her eastern borders, penetrated for 250 miles the prineipal commereial and military valleys on the eastern slope of the continent, and today have a background of from 200 to 300 years of oeeupancy and settlement, a condition existing at no other point on the North Atlantie seafront. Albany (1617), next to Jamestown, Va. (1607), and St. Augustine, Fla. (1566), is the oldest settlement in the Union; if the 13 Colonies only are included, and if Jamestown is thrown out, as deserted in 1676, it may perhaps be called the oldest with a continuous life, though its aetual settlement (1623) as a residence is later than Plymouth (1620).

Program of Mohawk Valley Historical Anniversaries Planned for Next Decade

1922: Two hundredth anniversary of the settlement of Stone Arabia by the Palatines; held June 14; 2,000 present.

1922: One hundred fiftieth anniversary of the founding of Tryon County and building of Johnstown Court House and Jail; held Sept. 8-9; 10,000 present each day.

1922-1925: Two hundredth anniversary of purchase from the Mohawks (June 9, 1722), and settlement of the German Flats seetion (Herkimer, Mohawk, Ilion, Frankfort). Committees now making arrangements.

1923: Fiftieth anniversary of the making of the world's first typewriter at Ilion.

1924: July 11, one hundred fiftieth anniversary of the death of Sir William Johnson at Johnstown.

1924: August 26, one hundred fiftieth anniversary of the first meeting of a Tryon County (Palatine) committee of safety at Stone Arabia.

1925: Centennial of the opening of the Erie Canal, first work on which was done at Rome, July 4, 1817.

1926: Centennial of the granting of charter and eommeneement of work on the Mohawk and Hudson Railroad (parent of the New York Central).

1926: One hundred fiftieth anniversary of the building of Fort Dayton (Herkimer), Fort Davis (Stone Arabia), Fort Plain, and strengthening or reeonstruction of Fort Hunter, Fort Johnstown, Fort Herkimer, and Fort Schuyler.

1927: August 3-7, one hundred fiftieth anniversary of the march of General Herkimer from his home near Fall Hill to the military mobilization point at Fort Dayton (Aug. 4) and the mareh thence to Oriskany, with camp at Staring Creek (night of Aug. 4) and west of the Sauquoit at Whitesboro (night of Aug. 5).

1927: August 3, one hundred fiftieth anniversary of the first known military raising of the Stars and Stripes over Fort Schuyler (now Rome).

1927: Aug. 6, one hundred fiftieth anniversary of the Battle of Oriskany and Col. Willett's sortie from Fort Sehuyler (now Rome).

1927: Aug. 16, one hundred fiftieth anniversary of the death of Gen. Herkimer at his home at Fall Hill.

1927: Aug. 22, one hundred fiftieth anniversary of the relief of Fort Schuyler (now Rome) by Gen. Arnold's Ameriean army.

1928: Nov. 10, one hundred fiftieth anniversary of the Cherry Valley massacre.

1929: One hundred fiftieth anniversary of Gen. Clinton's army at Canajoharie and march overland to Otsego Lake.

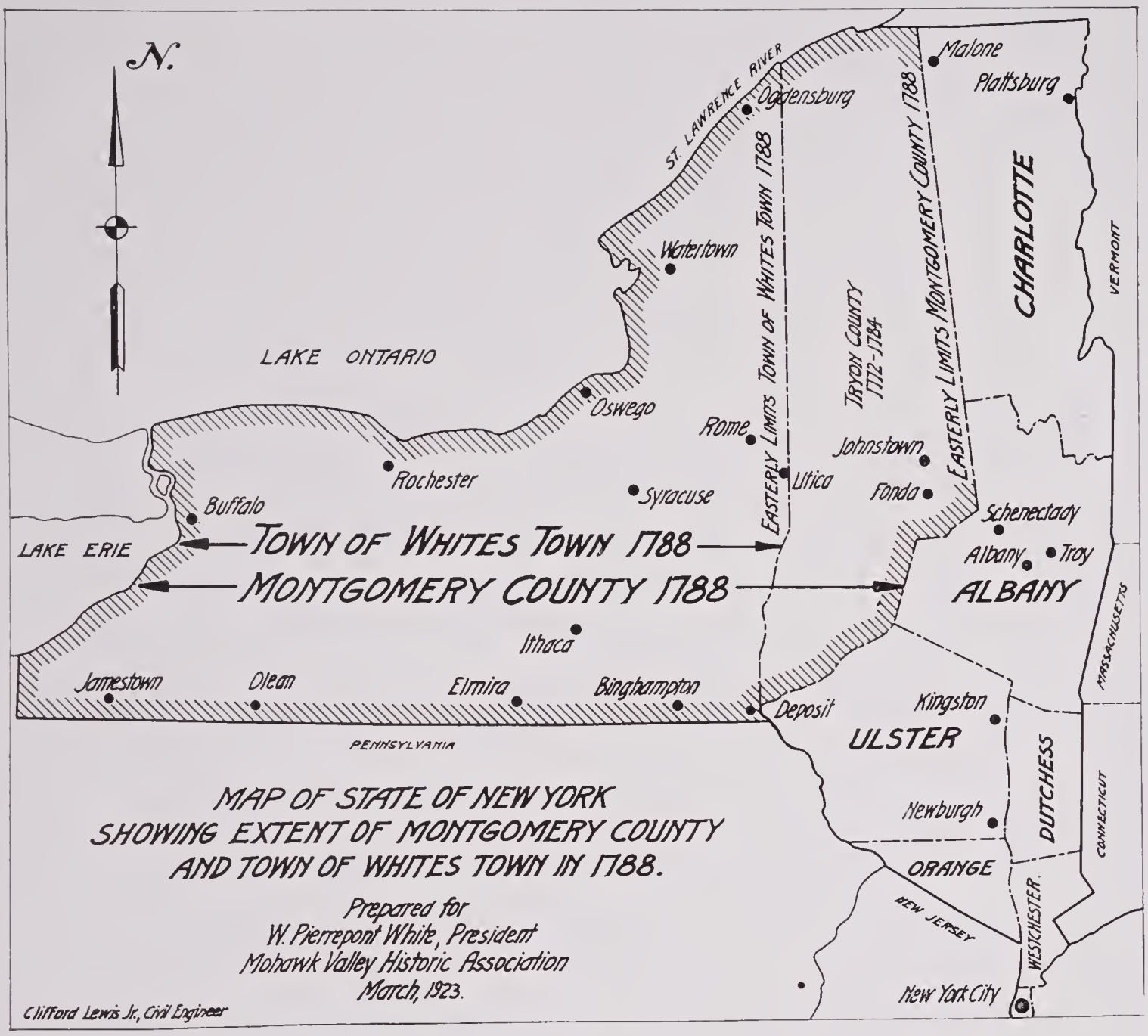
1930: Oct. 19, one hundred fiftieth anniversary of the Battles of Stone Arabia and Klock's Field.

1931: Oct. 25, one hundred fiftieth anniversary of the Battle of Johnstown.

1931: Centennial of the opening of the Mohawk and Hudson Railroad.

1932: Utica City Centennial.

1933: One hundred fiftieth anniversary of Washington's visit to the Mohawk Valley, stopping at Fort Herkimer, Fort Dayton, Fort Plain (Rensselaer), Fort Schuyler (now Rome), Cherry Valley, Canajoharie and Schenectady.



MAP OF STATE OF NEW YORK
SHOWING EXTENT OF MONTGOMERY COUNTY
AND TOWN OF WHITES TOWN IN 1788.

Prepared for
W. Pierrepont White, President
Mohawk Valley Historic Association
March, 1923.

Clifford Lewis Jr., Civil Engineer

Cities and Dates of Charters Once in the Area of Old Town of Whitestown

Date of Incorporation	City	1920 Population	1920 Total Valuation
1832	Utica	94,156	$ 91,324,000
1832	Buffalo	506,775	597,634,000
1834	Rochester	295,750	295,764,000
1847	Syracuse	171,717	181,321,000
1848	Auburn	36,192	25,201,000
1848	Oswego	23,626	16,496,000
1864	Elmira	45,393	41,735,000
1865	Lockport	21,308	13,450,000
1868	Ogdensburg	14,609	5,753,000
1869	Watertown	31,285	32,085,000
1867	Binghamton	66,800	56,636,000
1870	Rome	26,341	24,850,000
1880	Dunkirk	19,336	9,931,000
1886	Jamestown	38,917	24,501,000
1888	Hornell	15,025	7,856,000
1888	Ithaca	17,004	15,217,000
1890	Corning	15,820	10,333,000

Date of Incorporation	City	1920 Population	1920 Total Valuation
1892	Niagara Falls	50,760	$ 100,471,000
1893	Olean	20,506	13,935,000
1897	North Tonawanda	15,482	15,989,000
1898	Geneva	14,648	12,541,000
1900	Cortland	13,294	11,089,000
1901	Oneida	10,541	5,713,000
1902	Fulton	13,043	7,726,000
1903	Tonawanda	10,068	13,147,000
1909	Lackawanna	17,918	18,459,000
1909	Oneonta	11,582	8,506,000
1913	Canandaigua	7,356	5,418,000
1914	Batavia	13,541	11,845,000
1915	Norwich	8,268	4,478,000
1916	Sherrill	4,522	3,791,000
		1,651,583	$ 1,683,195,000

Counties and Dates of Erection Once in the Area of Old Town of Whitestown

Counties	Date of Erection	1920 Population	1920 Total Valuation
Allegany	1806	36,842	$ 32,395,000
Broome	1806	113,610	91,328,000
Cattaraugus	1808	70,297	47,130,000
Cayuga	1799	65,221	48,875,000
Chautaugua	1808	115,309	83,942,000
Chemung	1836	65,872	54,443,000
Chenango	1798	34,969	20,414,000
Cortland	1808	29,625	22,275,000
Erie	1821	633,566	757,004,000
Genesee	1802	37,631	39,817,000
Jefferson	1805	82,250	71,731,000
Lewis	1805	23,704	14,335,000
Livingston	1821	36,830	33,219,000
Madison	1806	39,535	25,032,000
Monroe	1821	385,034	369,081,000
Niagara	1808	118,386	173,750,000
Oneida	1798	182,833	162,521,000
Onondaga	1794	240,990	242,668,000
Ontario	1789	52,652	52,251,000
Orleans	1824	28,619	30,244,000
Oswego	1816	71,045	43,831,000
St. Lawrence (1/3)	1802	27,707	18,200,000
Schuyler	1859	13,098	8,930,000
Seneca	1804	24,735	20,336,000
Steuben	1796	80,627	48,899,000
Tioga	1791	24,212	15,272,000
Tompkins	1817	35,285	28,512,000
Wayne	1823	48,827	40,590,000
Wyoming	1841	30,314	26,160,000
Yates	1823	16,641	13,245,000
		2,766,266	$ 2,746,430,000

UTICA CHAMBER OF COMMERCE
UTICA, N. Y.

March 6th, 1923

Mr. Prospective Locator,

Dear Sir:

The Chamber of Commerce of Utica extends to you a hearty invitation to come to our city and fully investigate its commercial assets. This organization also stands willing to furnish you any data you may desire regarding the facilities of the city and the surrounding communities so that you may judge the advisability of making the Upper Mohawk Valley the home of your manufacturing organization.

You are assured that, when you come to Utica, you will be given every opportunity to thoroughly investigate all the claims which have been set forth in favor of this industrial district. You are also assured that every business man in this city will co-operate in placing you in a position to judge the fitness of the community to supply your industrial requirements.

Yours very truly,

J. G. DUFFY, Secretary

The Dolgeville Power Plant of the Utica Gas & Electric Company at the High Falls of East Canada Creek

The Source of Power

THE Upper Mohawk Valley is now a great industrial center and to maintain and expand its position as an industrial center it is necessary that there be a supply of continuous, highly satisfactory, efficient power constantly available. An industrial center cannot exist without dependable, high-grade power, and it cannot industrially expand beyond the available supply of power. The following pages describe the methods used for generating, refining and distributing power as used by the Utica Gas & Electric Company, as this company supplies the power necessary to operate the present industries throughout a large section of the Mohawk Valley and is in a position to fill all the demands for power for all time to come.

Central Office Building, Utica Gas & Electric Company, Utica. This building houses the various departments forming contact with the public, the officers and staff of the company and the two departments of engineers. The front windows are at all times filled with displays showing electrically powered and operated devices for home and business use, modern uses and application of gas for both domestic and industrial purposes, as well as displays which possess distinct educational value. A large number of people view these displays every day and evening. It is located on Genesee Street in the heart of the business section of Utica. The photograph from which this illustration was made was taken at night and shows the building illuminated with a border of small lights and with the name of the company indicated with an illuminated sign. The attraction value of such illumination is clearly demonstrated through the decided contrast between the company's offices and the buildings which join it on either side. The City Hall, which is to the right, is lost in the darkness. This building was originally the offices of the County Clerk of Oneida County and also housed the other county officers until the erection of the present Court House. For a number of years the Board of Supervisors of Oneida County met in this building and here were passed many of the progressive measures which have contributed so largely to the growth of Oneida County and thus to the industrial advancement of the Upper Mohawk Valley. It is fitting that the building should now be occupied by a public utility organization which, through service, is also contributing to the growth of the city, the county and the industrial district

The Power Back of the Power

THIS is the inside story of the power back of the power which moves the industries of the Upper Mohawk Valley. It is the story of the great power plants, where the power is collected, the transmission and distribution system, and all the intricate parts and details which bring the power from the source to the customer.

The transmitting, refining and distributing is done with the aid of that wonderfully flexible force which we call electricity; the power is that which we find in water and in coal.

It is probable that, long before there was any form of animal life on this planet, the water came down the courses of the Mohawk Valley in the same manner as it comes down today; the power was there then, but it spent its force in wearing a channel for itself on the way to the sea.

Long ago, in the age of acrogens and amphibians, as the geologist terms the period, coal was formed; and yet it is only a little over one hundred years since man first learned that this coal could be placed under a boiler to generate heat and through this heat turn water into steam and with this steam move an engine and so secure power.

Our forefathers, in a crude way, built waterwheels and used some of the power in the streams, but the power thus obtainable was of a very low rating and the task to which it was applied had to be located within a few feet of the source of power.

Power from coal through steam had to be applied in the same way, at the source of production or generation, through many belts, shafts and pulleys and with a great loss of energy.

Then came electricity and the science of taking the raw power from the stream and the raw power in the coal, refining this power and distributing it both economically and efficiently.

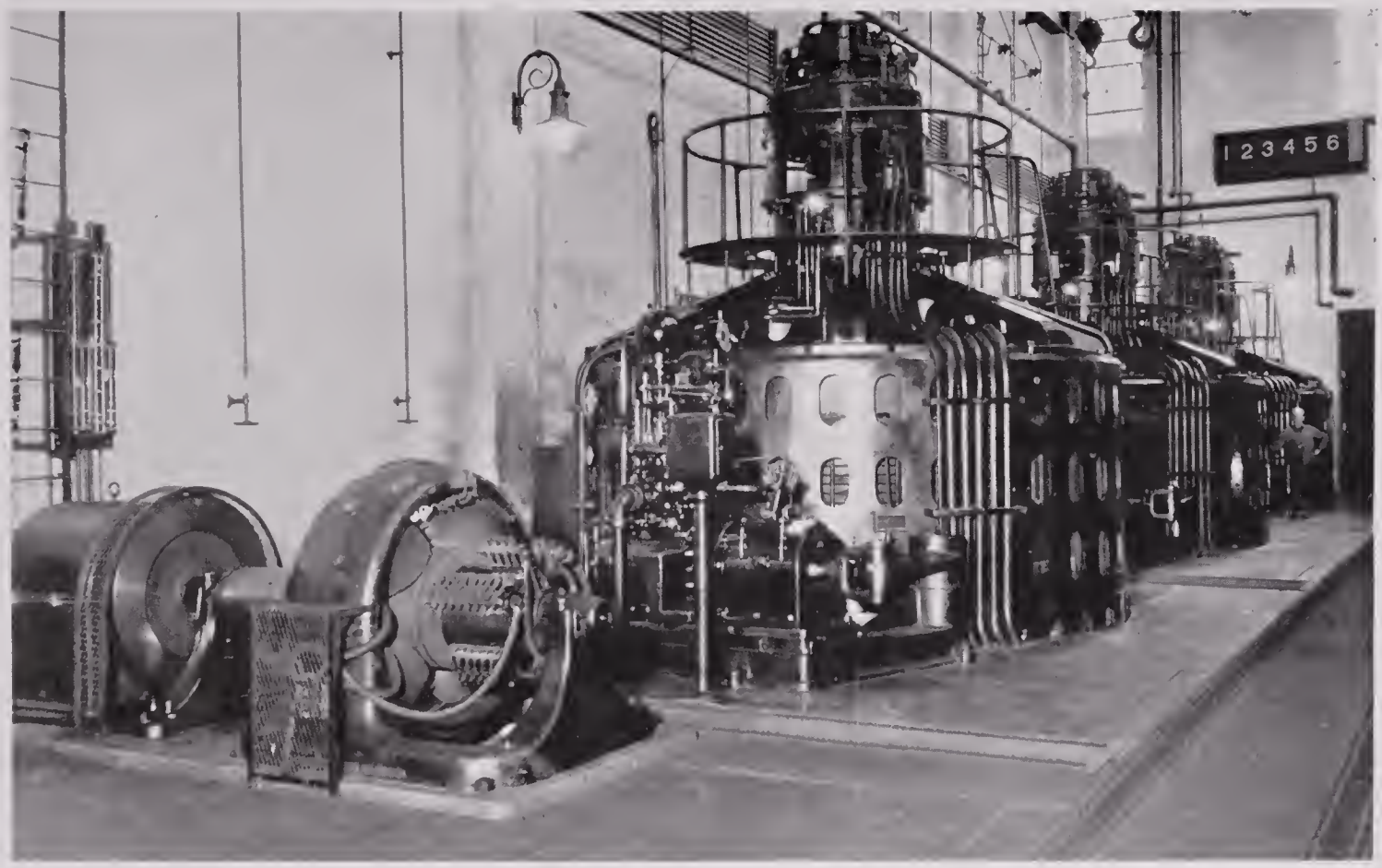
Commercial electricity, then, is not so much power in itself as it is the means by which the greatest amount of power possible to produce can be taken from the source of production, carried long distances, controlled, regulated, distributed and applied to a given task with the least possible loss of energy.

Somewhere it has been said that to have proper light one must be unconscious of the source of light; so, when one is reading and the light is too strong, he will turn off part of the light in the room; or, if the light is insufficient, he will turn on a lamp or two until a satisfactory amount is secured. We have all done the same thing time and time again without a thought to where this adjustable quantity of light comes from or the method or system by which it is produced.

It may be that the reader has gone into a great manufacturing plant some morning and thrown on the switch which controls the lighting system and then turned to the controller which sent the power to several hundred machines, starting them in motion so the operators could begin their daily work. You did this more or less unconsciously, without ever registering in your mind a realization of what caused the lamps to light or the machines to move.

This is not to infer that we do not know that the greatest of forces known to science is electricity, which has the power to light lamps and the power of moving machines, because we do know it; but, nevertheless, while we do know of the force, we seldom think of the power back of the power.

The other day a man called up a friend of his on the telephone. The man he called is the head of a large manufacturing concern where there is a great number of heavy metal working machines, all electrically driven, and where there are two electric elevators which will each lift five tons. He said: "George, what is a watt?" "Why," George answered, "it is one of the measurements in determining electricity. Wait a minute and I'll find out for you which one it is." "No, thank you," the questioner said, "all I wanted to find out was if you knew without looking it up." The manufacturer then continued: "When I was fifteen years of age I could have answered your question at once, because most boys know certain phases of electricity. Boys know in detail many things which men are forced in part to forget. We use a great deal of electricity for power. I know that it is most satis-



Three large generating units of the Trenton Falls Plant have a total capacity of 19,250 H. P., and are located in the new section of the plant

factory and economical. I know, as well, that it is the best and most economical method of lighting. I do not believe that I have given electricity a thought for years; if I ever have, all I remember is that somewhere there is a generator which collects this force, a wire which brings it to my house or factory and a motor or lamps which use this force to move a machine or light a given space. I accept it, use it and seldom think of it."

This phone call was a test. This manufacturer is one of the best informed men on a very wide range of subjects that it could be one's privilege to know. He is a man with a university education, a technical expert in his own field and a graduate of mechanical engineering.

All of us accept electricity just as he accepts it. We know that somewhere there is a machine which produces this force and sends it along a wire to motors and to lamps. Let us see what comes between the generator and the lamp or motor.

A visitor to Utica, New York, arose one morning at his hotel and picked up a paper at the door of his room and took it to the breakfast table with him. He read that a nationally known figure in the world of business had said that the Mohawk Valley was destined to become one of the greatest industrial centers of the United States. The visitor's business took him to the general offices of the Utica Gas & Electric Company, and, while talking with one of the executives, brought up the subject of this forecast.

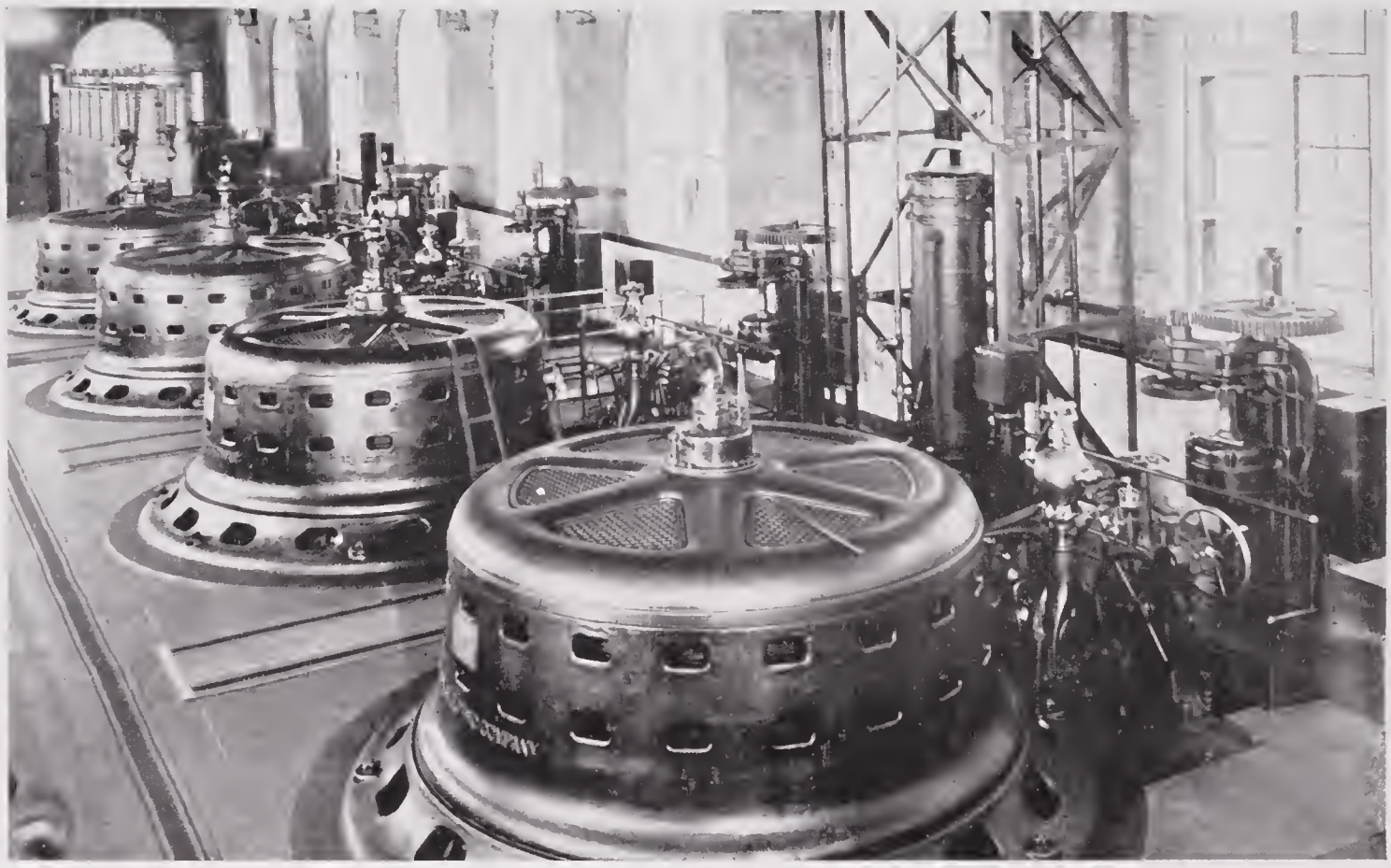
"Yes," replied the executive, "and the high quality of electrical power which we produce will be one of the important factors in making this forecast come true."

"High quality of power!" said the visitor. "Why, power is power! I didn't know there was any difference in power!"

The executive replied: "There are just as many differences in the grades of power as there are in other manufactured products. The power we make, refine and scientifically distribute throughout the Upper Mohawk Valley is of the very highest quality and the very finest grade. If you will come with me, I will show you what I mean."

In the following pages is told just as briefly as possible what the visitor saw, from the source of the power through its various stages to the ultimate consumer.

The principal source of electric power in the Utica Gas & Electric Company's system is hydro-electric power, produced by three plants located at Trenton Falls, on the West



Four generating units at the Trenton Falls Plant, which have a combined capacity of 5,400 H. P. With the addition of the three new units shown on the opposite page, this plant's total capacity is 35,400 H. P.

Canada Creek; Little Falls on the Mohawk River, and Dolgeville on the East Canada Creek.

Trenton Falls is a beautiful series of four waterfalls in a wonderful gorge which the West Canada Creek has formed in the limestone. The falls are located about fifteen miles north of Utica and the Trenton Falls Power Station is located in the lower gorge a short distance below the falls.

The West Canada Creek has its source nearly fifty miles northeast of Trenton Falls, in the heart of the Adirondack region. This section of the Adirondacks has been found to possess the highest rate of rainfall of any part of New York State. Trenton Falls, therefore, is a most favorable spot for hydro-electric power development.

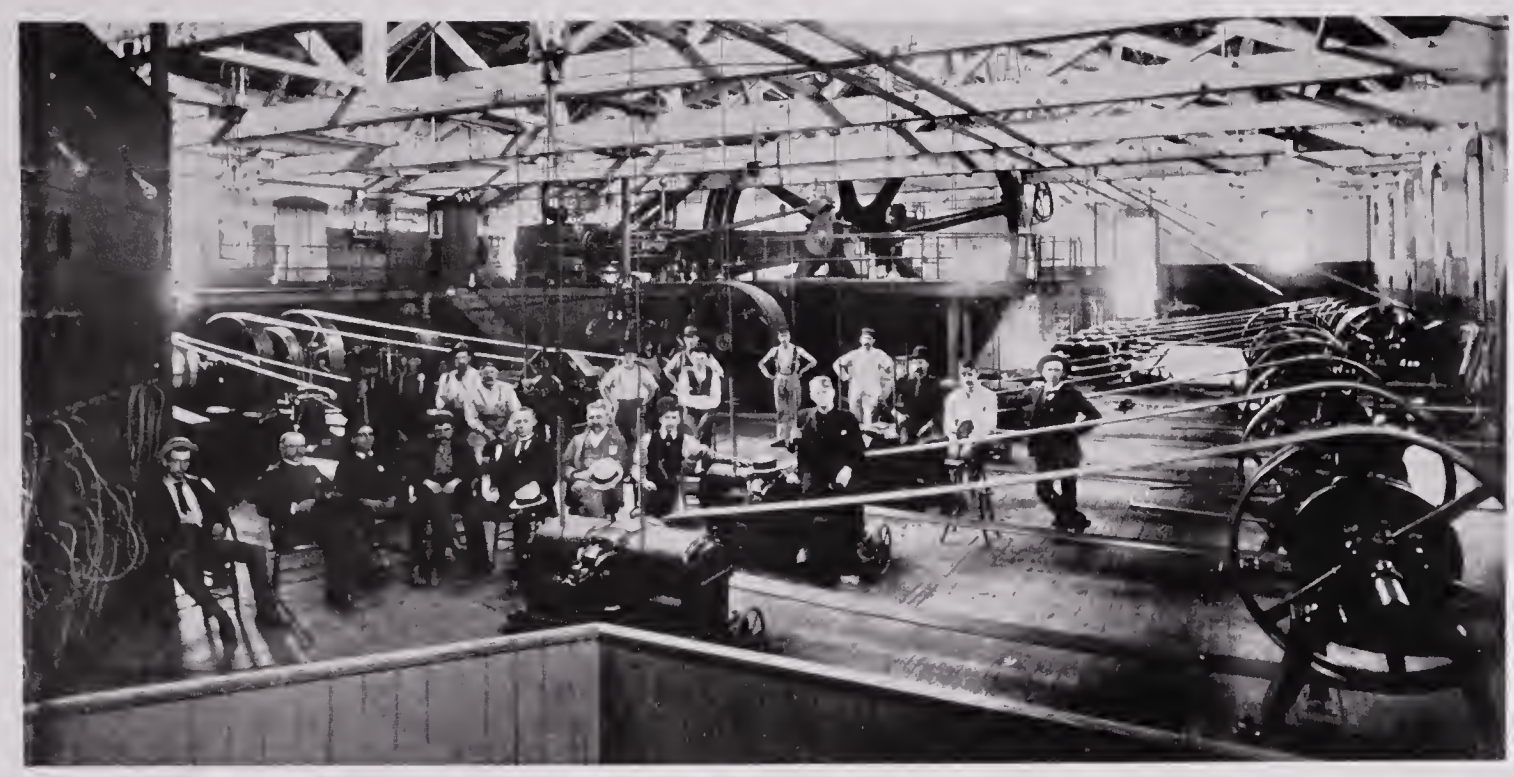
The water of West Canada Creek is collected by a great concrete dam in the gorge above the falls and held in storage in a large reservoir or pond. From the reservoir the water flows through two immense pipe lines down past the falls to a power house in the lower gorge, about three-quarters of a mile below the dam. The water is used under a head of 265 feet, or, in other words, the turbines where it is used are 265 feet lower than the level of the water above the dam.

The Trenton Falls plant really consists of two separate power plants, using the water from the same reservoir, and with the power houses connected so as to form one continuous structure.

The first plant was built in 1900 and put into service in 1901. At that time it had the distinction of using water under the highest head of any plant east of the Rocky Mountains. It was also distinguished by reason of having four vertical shaft water turbine-generator units, which were the first to be designed according to engineering principles, as well as manufactured, in America. These machines are still giving good service. Each generator furnishes 1,350 horsepower, or a total of 5,400 horsepower.

In 1917-18 the second plant was constructed, having been called forth by the immense demands for power caused by the World War as well as the tremendous growth in power requirements in the Upper Mohawk Valley. At this time two 10,750 horsepower turbines and generators were placed in the new power house, leaving a space for the third, which has been recently added. These three generators give the capacity of the two plants at Trenton Falls a combined capacity of 35,400 horsepower.

The visitor to Trenton Falls will be particularly attracted by the tall, slender stand-



Interior of first Steam Electric Generating Station of the Utica Gas & Electric Company, which started operation January 1, 1888. This plant was operated on the so-called "Moonlight Schedule." There is quite a decided difference between this plant and the present day power stations

pipe near the power house which was a part of the original plant and to the much larger surge tank connected to the new and larger pipe line. He will ask: "What is their purpose?" All of us are familiar with what happens when we turn a tap in the bathroom to full flow and then shut it suddenly: the result is a loud thump or water hammer. In a hydro-electric plant the same thing happens. When the load goes off the plant suddenly the waterwheel gates close with the resulting water hammer, and which, because of the magnification in size and power, is far more serious than in our house piping. Those tanks are placed for the purpose of allowing the water to rise and then fall again, and again, gradually decreasing, without causing tremendous shocks in the pipes; and also to allow the speed of the waterwheels to be kept more nearly constant.

The consolidated power houses are located in a narrow gorge which the waters of the West Canada Creek have worn through the limestone formation to the present bed of the stream, over one hundred feet below the level of the cliffs. The stream is comparatively narrow and very deep at this point, and, with the ragged, rocky sides of the cliffs, covered with a growth of forest trees, forms as scenically beautiful a spot as one could wish to see.

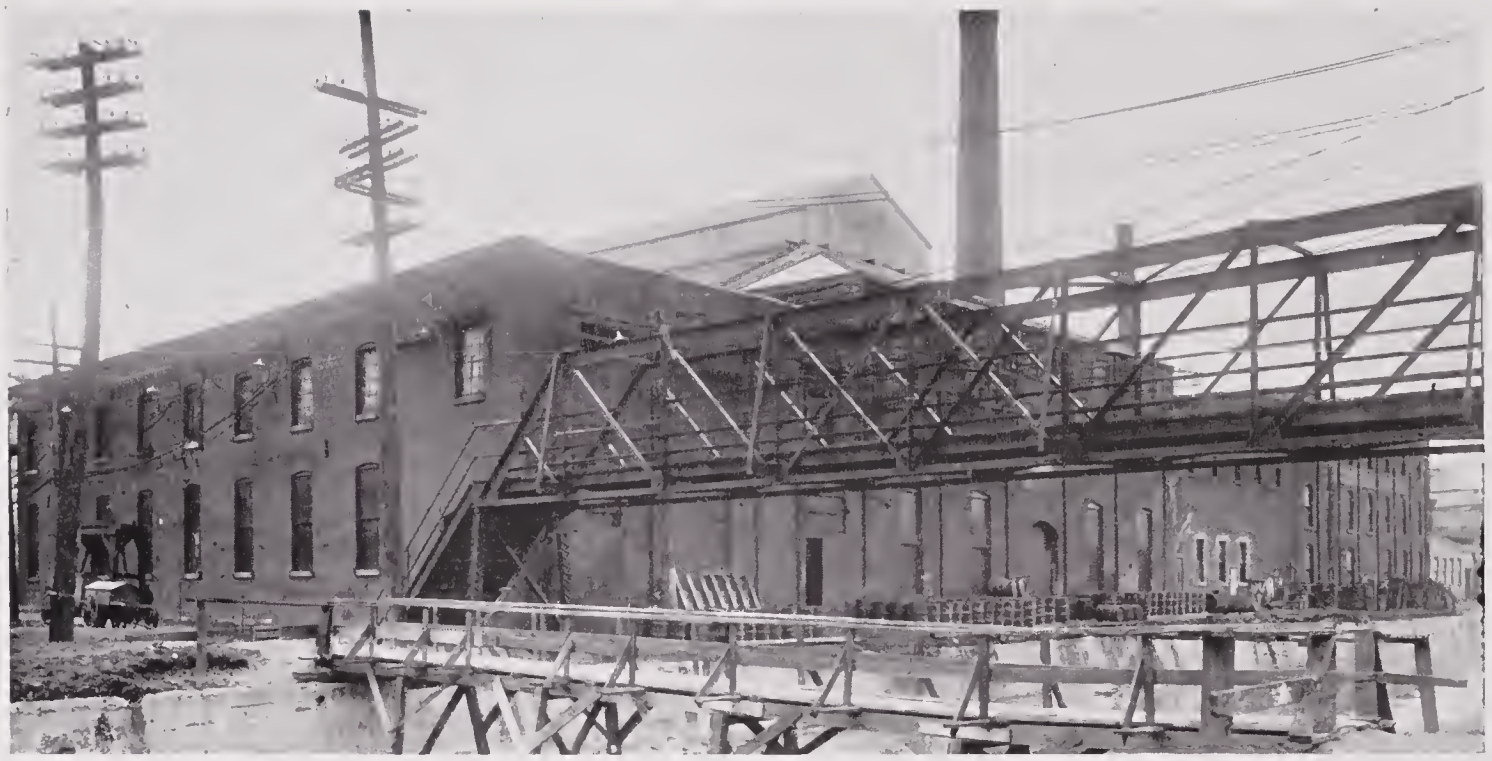
The original power house is an attractive one-story structure of Governeur marble with a red Spanish tile roof. The new power house, which opens into it, is considerably higher, built of concrete and steel and having an elevator by which one may enter the building from the cliff at road level and go directly to the various floors of the power station.

A visitor will notice that there is no visible connection between the immense generators and the wires which pass out of the building. All of these connecting wires are safely carried through conduits so that all chances of accidental contact with them are removed.

When one stands on the rock-formed shelf a few feet above the level of the stream, looks up the gorge in all its primitive beauty, then at the power station and the great conduits which lead down from the pipe lines to the turbines, then listens to the hum of the turbines and generators as they rapidly revolve, he cannot help being impressed with what science has accomplished in harnessing the power in the stream and distributing it in a refined state to points at great distances from the source.

Little Falls Power Station, at the City of Little Falls, uses a part of the water of the Mohawk River under a low head which averages about seventeen feet. The power house is an attractive structure of granite rock, which was found at the site of the building. There are three vertical waterwheel-driven generators, having a total capacity of 1,600 horsepower, which take the water through the canal from the so-called middle dam.

The Dolgeville Station, near the village of Dolgeville, is what is known among en-



Exterior view of the first Steam Generating Station of the Utica Gas & Electric Company. The property is still in use for other departments of the company. The course of the old Erie Canal is shown in the foreground. The interior view is shown on the opposite page

gineers as a medium head plant, using the water of the East Canada Creek under a head of seventy-two feet. At the head of the High Falls is a low stone dam. From this dam a steel pipe line leads down past the falls to the briek power house below. At the point where the pipe line descends to the power house one will see a surge tank whieh is for the same purpose as the surge tank at Trenton Falls. There are three horizontal waterwheel-driving generators in this plant, which have a total capaeity of 2,800 horsepower.

Everyone is familiar with the fact that our streams have great variations in the flow of water. In the spring, when winter is breaking up, we have large floods. In the summer, and also in the extreme cold weather of mid-winter, there is very little water in them.

The customers demand that their supply of electricity be adequate and at their service regardless of whether there is a great deal or very little water in the streams.

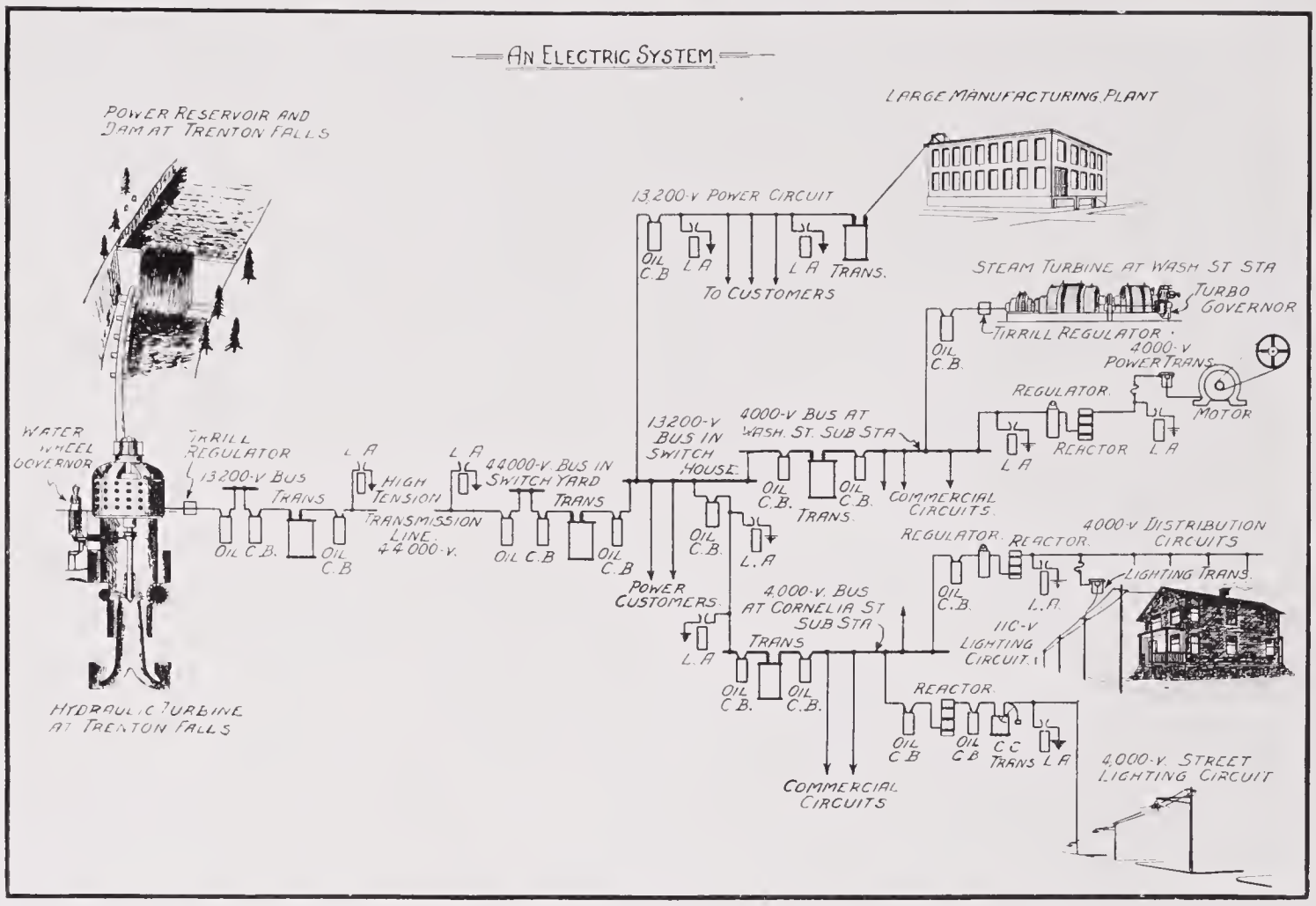
The companies supplying hydro-electric power, therefore, look at these tremendous amounts of water wasted at flood times and wish for some means of storing up the water so that it can be let out under control when the streams are low and thus assure a constant production of electricity to supply the continuous demands of the customers. This means that great storage reservoirs are not only desirable, but extremely necessary to the industrial welfare of great bodies of people. They would not only store up the water which ean be utilized by hydro-eleetrie plants in giving a eonstant serviee, but they also hold baek a great part of the water whieh causes the tremendous floods that oecasionally prove so destructive to property in the low lands and villages along the streams and rivers.

How clear it is, then, that the building of storage reservoirs with whieh to regulate the flow of streams is a publie benefaction: not only by enabling the wheels of industry to turn through inereasing the supply of hydro-eleetrie power and thus saving the consumption of countless tons of eoal whieh would otherwise be burned in the produetion of steam, but by protecting the property of all those who live in the distriet affected by the high water stages of the fluetuating streams.

Some progress has been made along this line. The State of New York has built a great reservoir and dam at Hinekley on the West Canada Creek, about five miles above Trenton Falls, which has served to greatly remove the danger of floods, and has also helped to increase the flow at Trenton Falls in times of low water.

The state has also built a large reservoir at Delta, which has been a wonderful benefit to the upper part of the Mohawk Valley, particularly to Rome. In addition, there are

The transmission system of the Utica Gas & Electric Company contains 89 miles of high-tension lines, as shown in these pictures. The overhead distributing lines cover a distance of over two hundred miles. These lines carry from two to twenty wires to a pole and so the total length of all the distribution wires reaches into a very large mileage. Through these wires 38 cities and communities are served. They are patrolled both summer and winter and the two pictures in the center give some idea of the difficulties encountered by the patrolmen in mid-winter



This graph will furnish some conception of the amount of equipment and the work which is necessary to take the power in the water and bring it, in the form of electricity, to your manufacturing plant or your home. It shows all the operations from the time the water leaves the dam until the force thus created is used to move machinery, light the streets or illuminate homes. The text matter is closely associated with this graph

a number of reservoirs on the East Canada Creek, which have greatly benefited the power at Dolgeville.

Many other great natural basins exist near the head of waters of these streams which could be transformed into storage reservoirs by building dams.

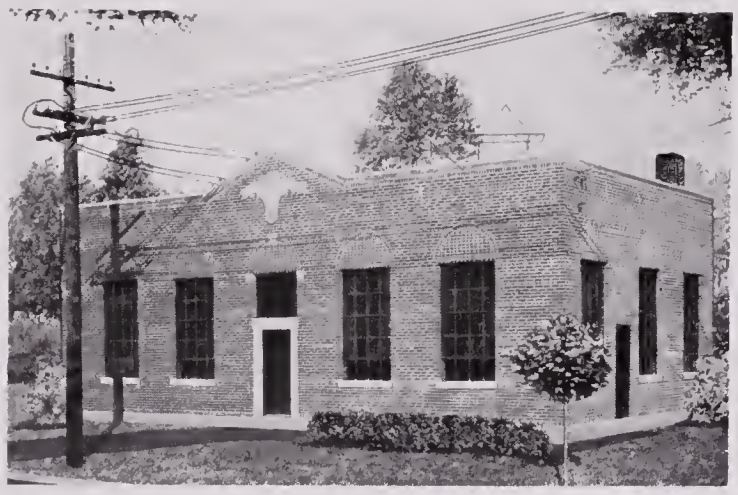
The Delta and Hinckley Reservoirs were built primarily to store up a portion of the flood waters so that they could be let out during the dry seasons of the year in sufficient quantities to keep the Barge Canal filled throughout the navigation season. While both of these reservoirs are impressive bodies of water and the dams are imposing structures, yet, to effectively control the larger floods, more and larger reservoirs must be constructed.

It is known that there exist many other great natural basins near the headwaters of these streams in which it is feasible to create reservoirs capable of storing up sufficient of the flood water to cut down by nearly one-half the extreme height to which the largest floods would otherwise rise in the Mohawk River.

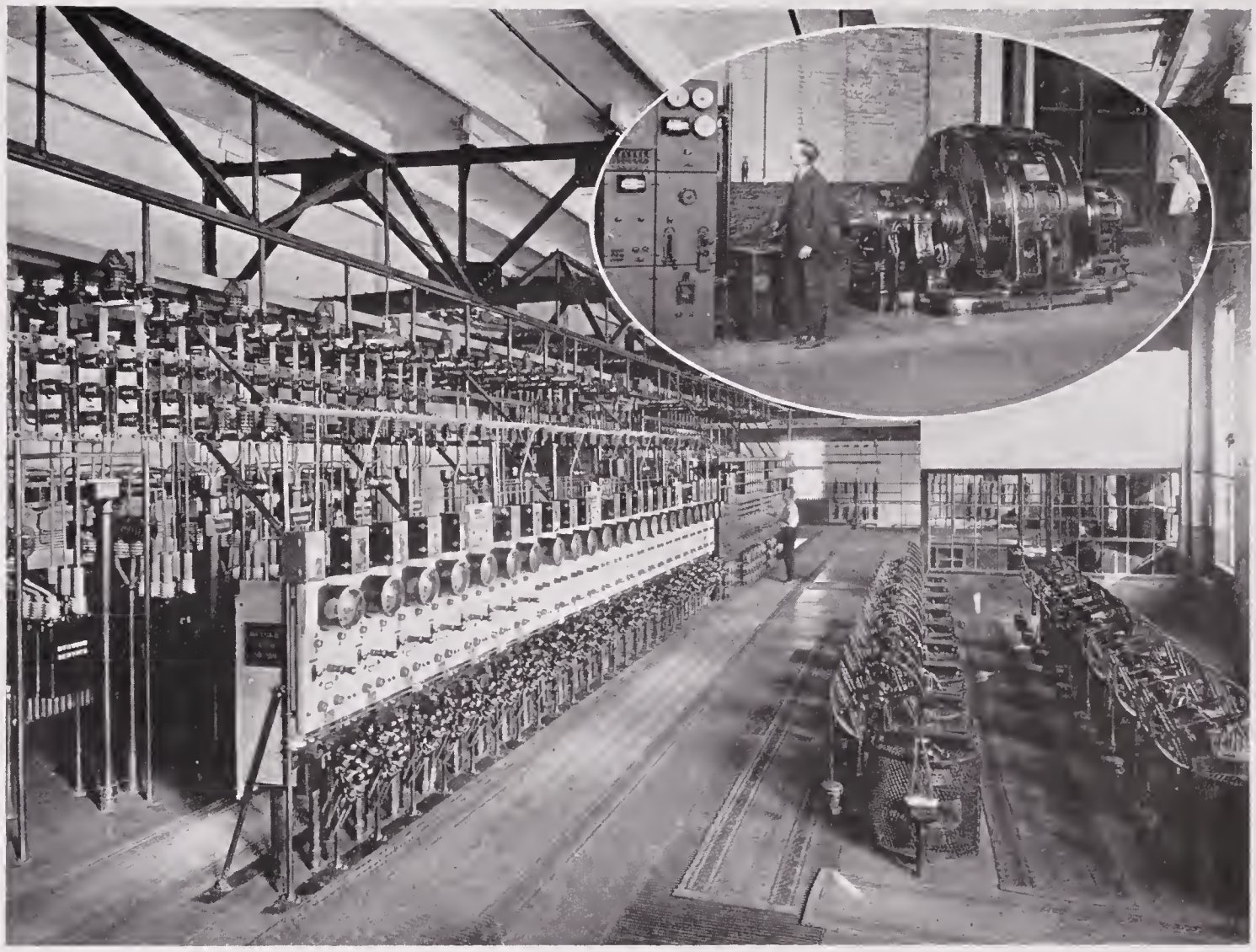
It, therefore, can only be a question of time when some agency will set about the work of conserving this water and putting it to some useful task rather than the destruction of our homes and property.

There are times even with the utmost care in using the water that is available when there is not sufficient power to be had for the hydro-electric plants to care for all the needs of the company's customers. There are also times when lightning and other elements may interrupt the supply for a few moments. To guard against this and to guarantee continuous service, the company has at Washington Street Station in Utica a steam plant which has four steam turbines, with a combined capacity of 27,000 horsepower. This plant is ordinarily operated as a "stand-by," producing no current, but standing by ready to "pick up" the load when, for any reason whatever, a line is interrupted or the hydro-electric plants are not in a position to carry the desired load.

Early in this discussion reference was made to power of the highest quality and of the finest grade which is being manufactured and distributed in the Upper Mohawk Valley by the Utica Gas & Electric Company. The reader is, no doubt, by this time questioning



Substations are stations placed along the transmission lines at distributing points where the current is taken from the high-tension lines, conducted through transformers and so regulated in distribution as to give the steady, even flow necessary to produce the highest quality power and light. Here are five of the thirteen substations of the Utica Gas & Electric Company



View of the switchboard and street-lighting transformers at the Cornelia Street Substation. Do you realize that so much fine and intricate machinery exists between the water behind the dam and your reading lamp? The insert shows a 5,000 K. V. A. Synchronous Condenser and switchboard in the same station

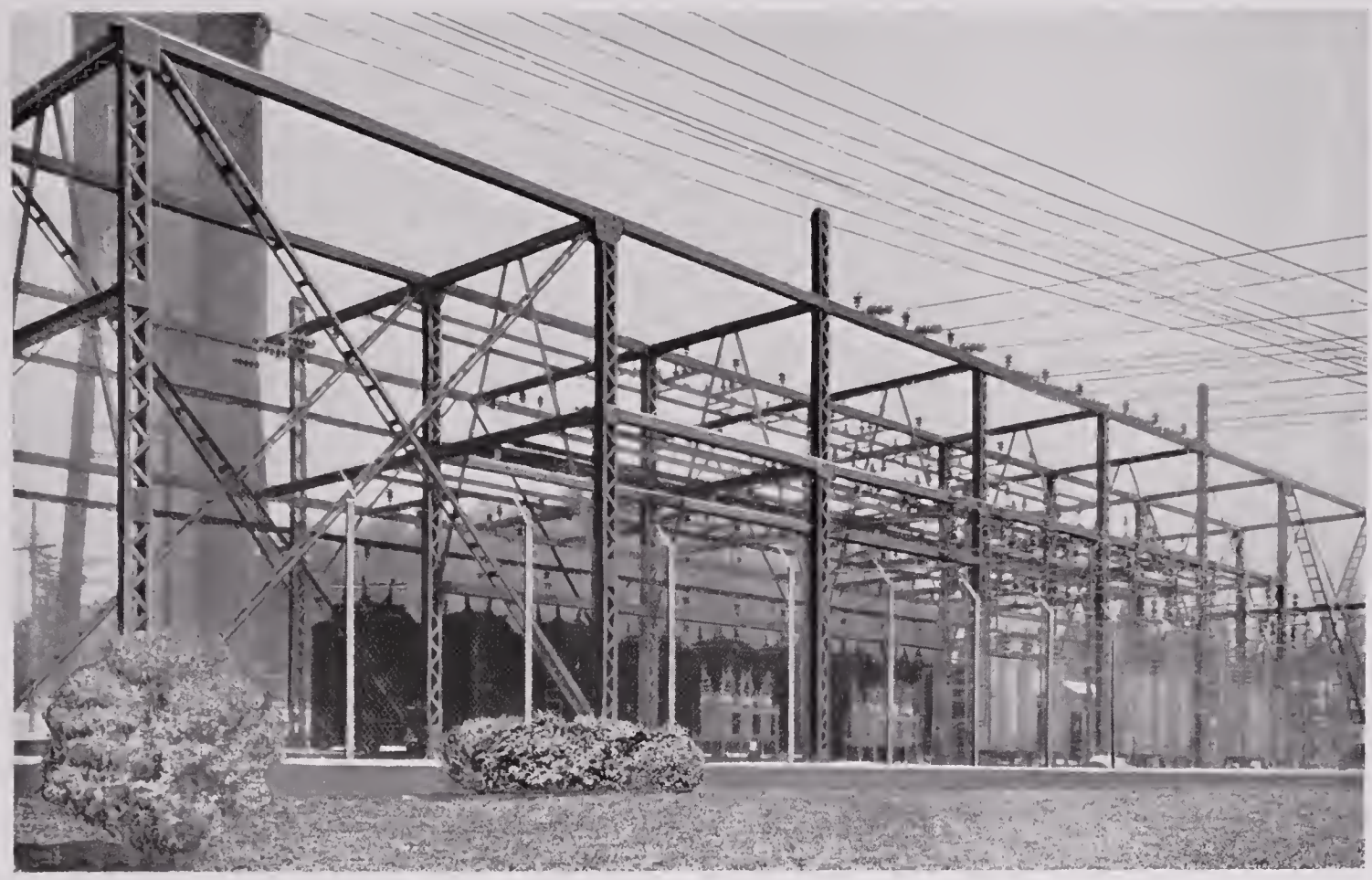
how this power is manufactured into a transportable product, refined and brought to a stage of commercial perfection through scientific methods.

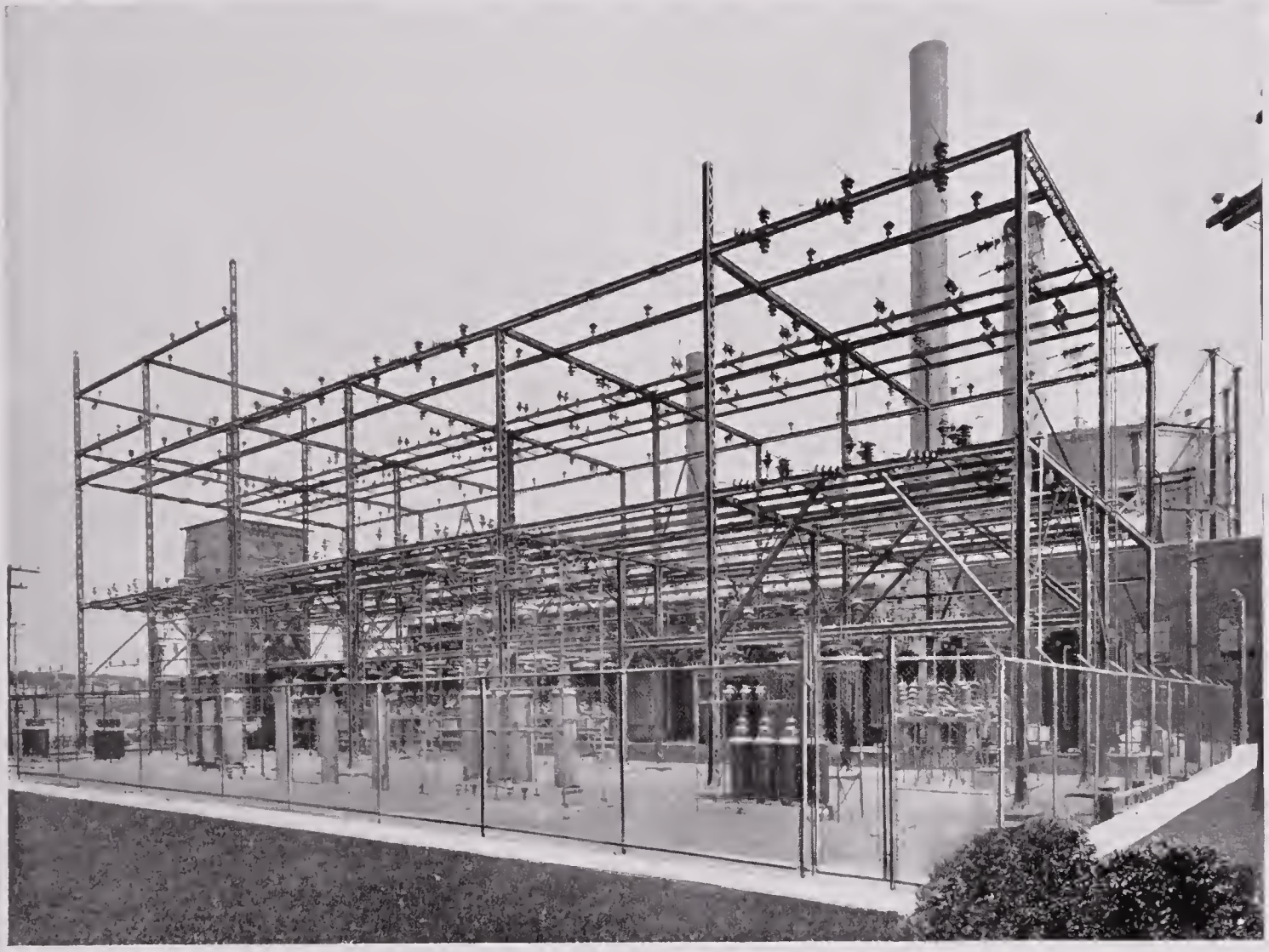
The illustrations in this book will furnish one with a slight conception of the miles and miles of lines and the great number of appliances which are installed between the generating machinery at the power-producing stations and the places where the electrical current is used by the customers. To describe each piece of apparatus in detail and tell just how it works would require an elaborate treatise on the theory and practice of electrical engineering. It would have to first treat with all the elements of electricity and then carry through the years and years of scientific research under thousands of men, telling what each one has contributed to the development of the control and employment of this wonderful force for the benefit of mankind; and then, when we had finished, we would have to say with one who was made a Peer of Great Britain as a reward for his contributions to the science of electricity: "I know what I can do with it, but I do not know what it is. I know what it will do for me, but I don't know why."

The best we can do is to tell you some of the things we must do to take the power in the water as we get it from the reservoir and the power from the coal mine as it comes in the raw state and set it to work in your factory, store, office or home.

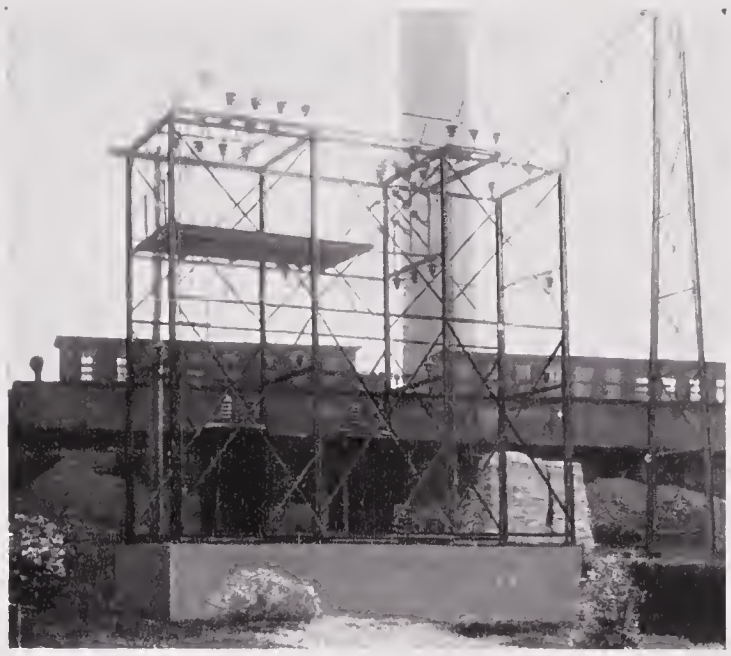
Involved in bringing this power to you are over 100 miles of high-tension transmission lines operating at 22,000 and 44,000 volts, together with new lines being built for operation at 66,000 and 110,000 volts. There are a large number of transformers for raising the voltage at the generating stations to the proper value for transmission and many more transformers at the substations for reducing the current to the proper voltage for distribution through the cities and towns.

A little comparison of electrical terms with terms familiar to the average reader may not be out of place at this time. Nearly all the





Above is the Transformer Station at Trenton Falls Plant of the Utica Gas & Electric Company. Note the standpipe in the background. The function of this tower is to reduce the vibration, known as water hammer, in the pipe line leading from the dam to the turbines. It is really a safety valve. Below is the outdoor substation at the Washington Street Plant showing lightning arresters. The constantly increasing demand for electricity for both power and lighting purposes is of such a magnitude that it is necessary for the company to have a construction department constantly at work planning and erecting additional structures so as to be in a position to render an adequate service and supply the highest quality power



The substation of the Utica Gas & Electric Company at the village of New York Mills

terms used in electricity can be explained by their similarity to terms used in hydraulics or water power.

When voltage is mentioned in connection with electricity it has a meaning similar to that of the word pressure when used in connection with water. The ampere is the measure of the quantity of electricity flowing, corresponding to the number of gallons of water, flowing in a second, but without reference to pressure.

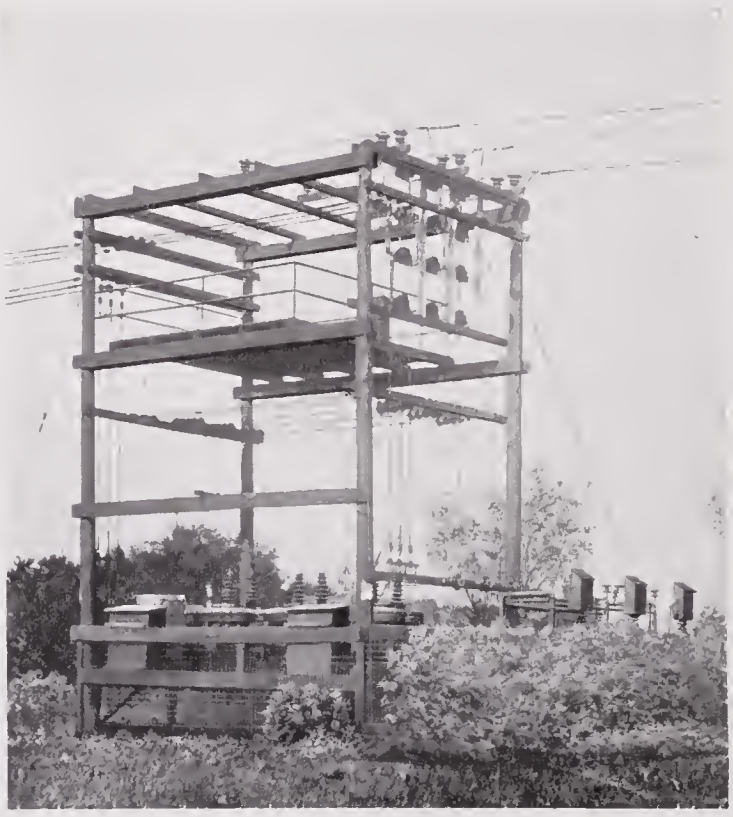
When we come to compute the power obtained from water we are accustomed to refer to it in horsepower, while in electricity we calculate power in watts or kilowatts, a kilowatt being 1,000 watts or almost exactly one and one-third horsepower.

If you will get out your text book you will read that a horsepower is equal to 33,000 foot pounds per minute or 550 foot pounds per second. This means that if 550 pounds of water or other substance is allowed to fall one foot in one second or 60 feet in one minute it will, theoretically, do work equal to one horsepower. But in practice this is not true, and we have to take into account the losses due to friction, etc. The ratio between the theoretical and the actual power is the efficiency, which in a well-designed hydro-electric plant is 80 per cent or slightly over. Therefore, more water than is theoretically required must be used to produce the horsepower sent out over the electrical conductors.

The watt mentioned above is the electrical power produced by the flow of a current of one ampere at an electrical pressure of one volt. The quantity of electrical power is dependent both upon the volt pressure and the number of amperes flowing. It, therefore, follows that, the higher the voltage or pressure, the greater the amount of power that may be transmitted. Electrical conductors or wires, like water pipes, can conduct only a certain amount or quantity of electricity measured in amperes without excessive losses. This is easily understood in the case of the water pipe, because we all know that when we attempt to force water through a pipe we quickly reach a point beyond which no more water can be made to flow, without greatly increasing the pressure. There is a definite point beyond which it is impractical to go in forcing water through a pipe. Likewise, with electrical conductors, there is a very definite limit to which current, measured in amperes, can be forced over them, because it would not pay to sustain the great losses which would occur in attempting to force larger amounts of current over them.

The only way in which large amounts of power can be transmitted over conductors is by high voltage, which keeps the current (amperes) down to an economical point. If this means were not employed and electrical conductors from distant power stations to customers were used at low voltages, the cost of wires and the tremendous structures to support them would be so enormous that no community or enterprise could possibly afford to pay the cost. Power companies have, there-

The substation of the Utica Gas & Electric Company at Clinton, New York



A linesman at work. Day and night, summer and winter, you see these skilled workmen out on the poles at all hours and in every condition of weather

fore, found it not only necessary and economical, but convenient, to increase the voltage or pressure at the generating stations to very high values so as to enable them to transmit power over conductors of reasonable size to distant markets. The apparatus employed to increase as well as to decrease the voltage is called a transformer and operates at very high efficiencies, so that the process of transformation of current is very economical.

Transmission voltages or tensions vary according to the requirements of the case. Successful transmission is now being accomplished with voltages as high as 220,000 volts, but such high voltage is not economical unless extremely large amounts of power are to be transmitted over very long distances running into hundreds of miles.

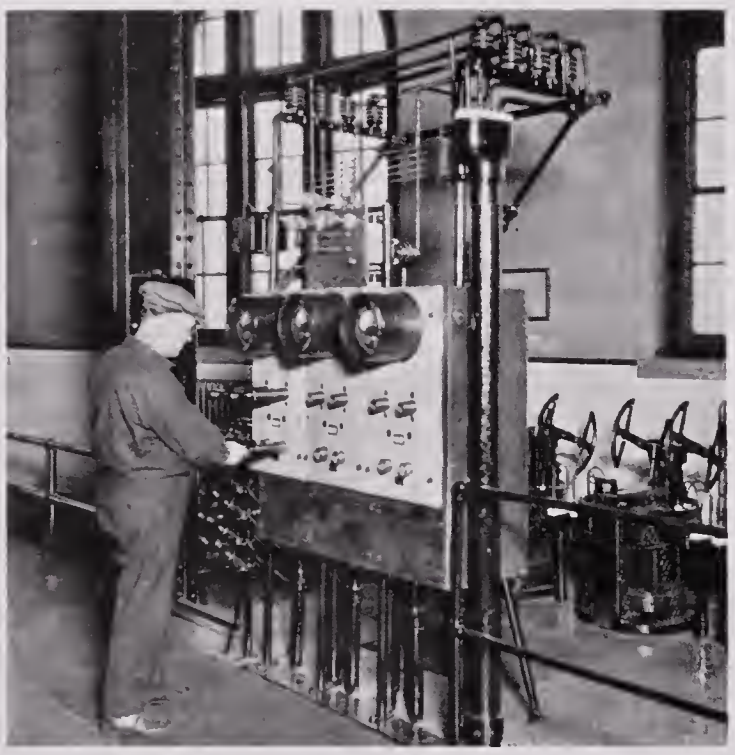
The Utica Gas & Electric Company is now building a transmission line designed to transmit power at 110,000 volts from Northern New York. This voltage will be used as soon as the amount of power to be transmitted under its contract with the Northern New York Utilities, Inc., becomes great enough to warrant it. At the outset, this line will be used at 66,000 volts. The ordinary transmission voltages used by the company are 22,000 and 44,000. These voltages are all dangerous and have to be handled by intelligent, trained men and could not be used in any ordinary manufacturing processes, much less in the home. It is necessary, therefore, to transform the voltage down from the high values mentioned in order to give the customer a safe voltage or pressure and one suitable to his particular needs. This transformation is made as near to the customer's premises as possible, and in the case of large manufacturing concerns it is often possible to make it on their premises so that in a number of instances large transformer stations will be found at the side of some of our large local plants.

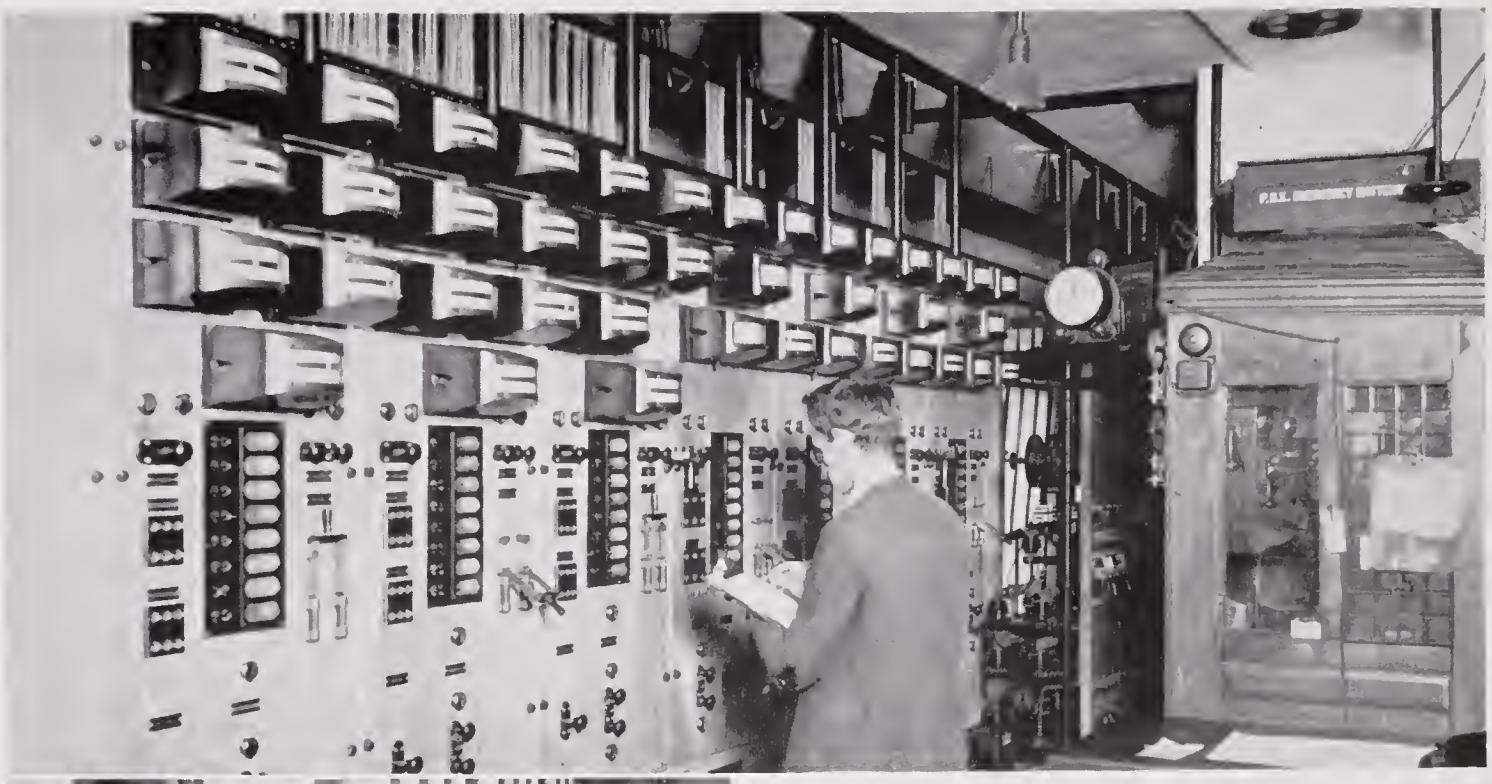
The reason for locating these transformer stations as close as possible to the consumers' homes or places of business is two-fold.

First: The immense amount of copper wire that would be required to transmit the current generated by the company at low tension over many miles of line.

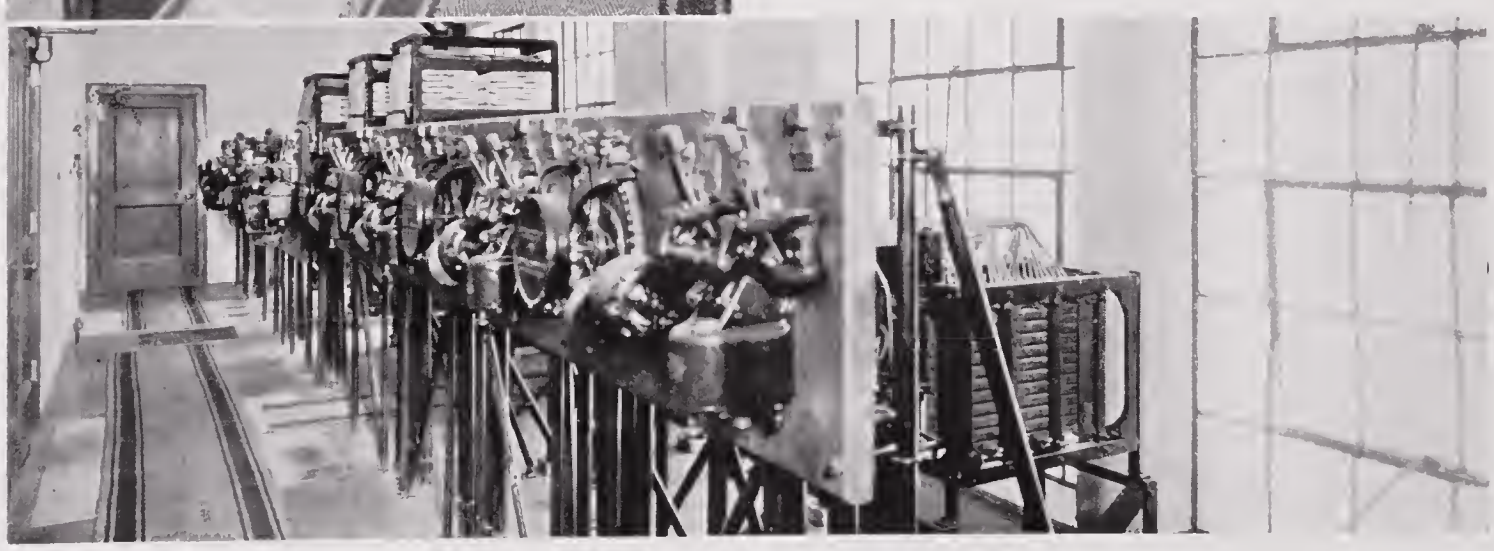
Second: As was stated above, these lines cannot transmit electricity without losing some of the voltage and power sent out. It inevitably results, then, that when these lines are carrying a large amount of current, the customer at the end of the line must receive his current at a less pressure than the customer nearer the source of supply. It is necessary, therefore, to keep these lines as short as possible and to proportion the sizes of the conductors and the power carried by them so that these differences in voltages or pressure shall not be too great, so that the customer, no matter where located on the line, shall have

"Turning on" the street lights of Little Falls. The operation is not greatly different from turning on a light in home or office. "Plugs in," as a layman would call it, and the lights are on





A view of a section of the switchboard at Trenton Falls Power Station of the Utica Gas & Electric Company is shown at the top of the page. The man in charge is in the act of making a reading of one of the series of very sensitive recording devices shown on the board. From these instruments on the face of the board this highly trained expert reads the conditions over his entire station as easily as you tell the time by your watch and is in a position to control the dispatching of loads from the station so that the highest quality of power is maintained. At the left is a view of the Switch Room at this station showing several compartments, each controlling 13,200 volts. At the bottom of the page is shown a section of the Generator Field Rheostat Room at the Trenton Falls Station. These pictures show the producing end of the manufacturing and distributing of the highest quality power. The finely adjusted instruments and the heavier apparatus which you see in the pictures are needed as the first step in taking the power from the generators to your motors or lamps. It is from these rooms and through these machines that the current must pass, as shown in the graph and described in the discussion, instead of directly from the generators, as many laymen are inclined to visualize the process. A trip through such a power station, following each operation in order, and then out to the substations, and from the substations to where the power is used, would convince any man that there is a great deal of applied thought and a great deal of hard work back of the electricity which supplies the lamp furnishing the light through which you are enabled to read this book



The exterior of the Cornelia Street Substation of the Utica Gas & Electric Company. At the left is the garage of the company

at all times a suitable voltage for his purpose.

During certain hours of the day, as at the dinner hour, the evening and the retiring hour, the lines which carry lighting are, of course, operated at a considerable load. During the other hours of the day they may carry relatively little load. From this it can be seen that there is opportunity for considerable variation in the voltage carried by these lines. If the company did not employ means for refining the current and compensating for these differences the service to the customer, whether for lighting or power, would be extremely unsatisfactory, as is the case in many lighting systems in small communities.

In order to correct this condition the company has installed in its various substations apparatus known as voltage regulators which automatically and with almost human precision vary the voltage on the outgoing lines so that it will be constant at a point in the center of the district which each line serves. The customer is, consequently, not annoyed by variations in intensity of the light caused by fluctuations of the voltage when so regulated.

Another refinement which is appreciated, particularly by the manufacturer whose machines must run at absolutely constant and even speed, is the control of the frequency or speed. All the generators on the system, whether driven by waterwheels or steam turbines, are provided with sensitive governors which are automatic in their action and absolutely control the speed within very close limits. Even if a very large part of the load is suddenly thrown off or a very large load comes on instantly, these governors control the speed so that the change would be almost imperceptible except to the experienced observer. The control of speed is accomplished by changing or varying the amount of water or steam admitted to the water or steam turbines to which the generators are connected.

It has been intimated herein that the transformation of voltage for the use of the customer must be done at a point as near to his location as possible. This means that transformers or substations must be located at frequent intervals in the territory being served in order to properly refine and distribute the current so that it will be one hundred per cent suited to the customer's needs. At these substations are located the transformers, which transform the high-tension or high-voltage current to the proper voltage for distribution; the switches which control the flow of current; the voltage regulators which regulate the voltage going out to the customer; and the lightning arresters which remove from the lines the lightning discharges which might otherwise destroy the apparatus.

In order to give good service to every customer the company has installed thirteen substations, where the voltage is reduced and the power is refined and regulated and the current sent out on the distribution lines to the customers. Six of these substations are located in or on the outskirts of Utica. These are located at Washington Street, Cornelia

Street, East Utica, West Utica, New York Mills Company and at New Hartford, each serving a particular locality nearby.

In addition to these substations the Sauquoit Valley is served by a substation at Sauquoit. A substation serves Clinton and vicinity, and a substation is located at each of the following cities and villages: Rome, Holland Patent, Ilion, Trenton Falls and Dolgeville. Some of these substations serve two or more villages or localities.

The supply of service to the customer is further protected and refined by installing lightning arresters on the poles at numerous points near the customer's home or place of business, which remove lightning discharges from the lines, as previously described.

It is not feasible to distribute electricity through the towns and along the highways to any extent at the low voltage which customers require, so an intermediate higher voltage, such as 2,300 volts, 4,000 volts, or 13,200 volts, is employed in order to give proper service and to keep down as much as is possible the investment required for copper wires and conductors. Close to the consumer this voltage is again reduced by so-called "distribution transformers" which are usually located near the tops of poles and which reduce the voltage to 110, 220, or other voltage required for ultimate use. From these transformers wires are carried along the streets and into the homes and places of business as required.

The customer demands that when he requires service he will find electricity at his command upon the mere closing of the switch and that it shall be of constant voltage and frequency. He does not wish to have his lights fluctuate up and down nor his motors speeding up and then slowing down. These requirements mean that an endless variety and number of devices must be installed by the company between the source of supply and the customer. Some of these devices are very rugged in their construction, while others are so delicate that they are worthy of the skill of the watchmaker in their manufacture and adjustment.

A further reason why it is necessary to control the speed or frequency is to protect the generators themselves from the disastrous effects of over-speeding. Instances can be cited where generators, turbines, and waterwheels have gone out of control and burst from the effects of centrifugal forces, with disastrous results.

Machines used in manufacturing processes are likewise subject to the same effects from over-speeding. In some instances in this locality there are many machines which, if over-speeded by only a slight percentage above normal, would tear themselves apart. Frequency or speed control is, therefore, of the greatest importance. Where the frequency is allowed to get out of control, it also may produce fluctuations in voltage, which will result in a great annoyance to persons using electric light.

Likewise, the voltage or pressure of the current at the generators is kept almost exactly constant by ingenious electrical devices. This, however, is not sufficient to give good service at the distant markets. When large amounts of power are passing over the transmission system, losses in voltage and power occur so that the current must be again refined at the substations before it is distributed. If we go into a modern distribution substation we will find tank-like machines with intricate systems of motors and switches which raise or lower the pressure of the current going out to the customers in proportion

A section of the hoop and stave pipe line which brings the water from the dam to the turbines at the Trenton Falls Plant of the Utica Gas & Electric Company. This flume is reinforced by a concrete trough along its entire length of 3,460 feet. A portion of it is of steel construction. The pipe is seven feet in diameter

The Little Falls Substation of the Utica Gas & Electric Company, Little Falls. This plant has a capacity of 1,600 H. P. The dam which controls the water flow has a storage on watershed of seven billion six hundred million cubic feet

to the amount being used so that the individual customer always receives his current at exactly the right voltage to give the best results. These regulators are so made that, no matter what the conditions may be, the customers' voltage will be uniform.

It is seen that, after provision has been made in the way of mechanical and electrical apparatus, the customer will get a finished product in the form of electricity that is always at his command, always at the proper voltage and always at the proper frequency.

Were not these precautions taken and were these regulation devices entirely missing or in their crude forms, the user of electricity would find as much difference between raw energy and the refined delivered electricity as between rough pig iron and the finely finished hairspring in a watch.

From what has been written the reader will understand that a great amount of precaution is taken and a large number of devices employed in order to so refine the current that its quality will always be one hundred per cent and there will be no occasion to complain that the very best service is not now being received.

Contrast this kind of service with that given by a plant in some small out-of-the-way place, which is not provided with voltage regulators, frequency control, etc., and the difference between raw and refined energy will be readily appreciated. The comparison is not at all unlike that between iron ore and the finished mechanical product. In many small towns, particularly those supplied from generators located in manufacturing plants, the customer is subjected to constant annoyance through the fluctuation of voltage, and the brightness of his lamps, and not infrequently to having his lights go entirely out for long or short periods of time while some adjustment is being made in the plant. In the larger electricity supply system, such occurrences are not only intolerable, but every effort should be made to make them impossible. This high grade of service is the aim and object of the Utica Gas & Electric Company, and no effort is spared to be sure that the customer receives it.

The reader will form some idea of the intricacy of the system by referring to the diagram of an electric system and bearing in mind the fact that this shows but one branch of the great highway between the generating station and the switch in his home, store, office or factory.

It was mentioned herein that the electric current is transformed up to high voltages for transmission. If this were not done, then size, weight and cost of conductors and supports would be such that it would not be practical nor profitable to transmit the raw energy from the distant power plant to the market.

Upon arriving close to the point of con-

One of the benches where electric meters are thoroughly tested by experts before being placed in service

sumption the voltage is transformed down to a value that is considered safe to carry about in the streets. There are three voltages for distribution on the Utica Company's system, namely, 2,300 volts, 4,000 volts and 13,000 volts.

In some of the smaller towns the 2,300-volt system is used, while in Utica and to an increasing extent elsewhere the 4,000-volt system is in use.

On account of the large amount of electricity used in the larger industries it has been found not only desirable, but necessary, to build distribution lines to operate at 13,200 volts. One of these lines will transmit all the energy that a very large manufacturing plant can use. The 4,000-volt line would be only sufficient to transmit a part of the requirements of some of our large local industries, but is of ample capacity for serving houses and the smaller industries.

From all of these distribution lines, power is supplied to the various customers at 110, 220 and 440 volts. The latter voltage is used only in some special industries. In order to transform down to these voltages the company has thousands of transformers, some of them very small and some very large, distributed through the streets and at the various industries. One small transformer will frequently serve a considerable number of residences or individual consumers.

The street lighting systems in the different towns are connected to special circuits at the various substations, from which they are supplied through transformers or rectifiers, built especially for this service and designed to feed the correct voltage and current to each lamp.

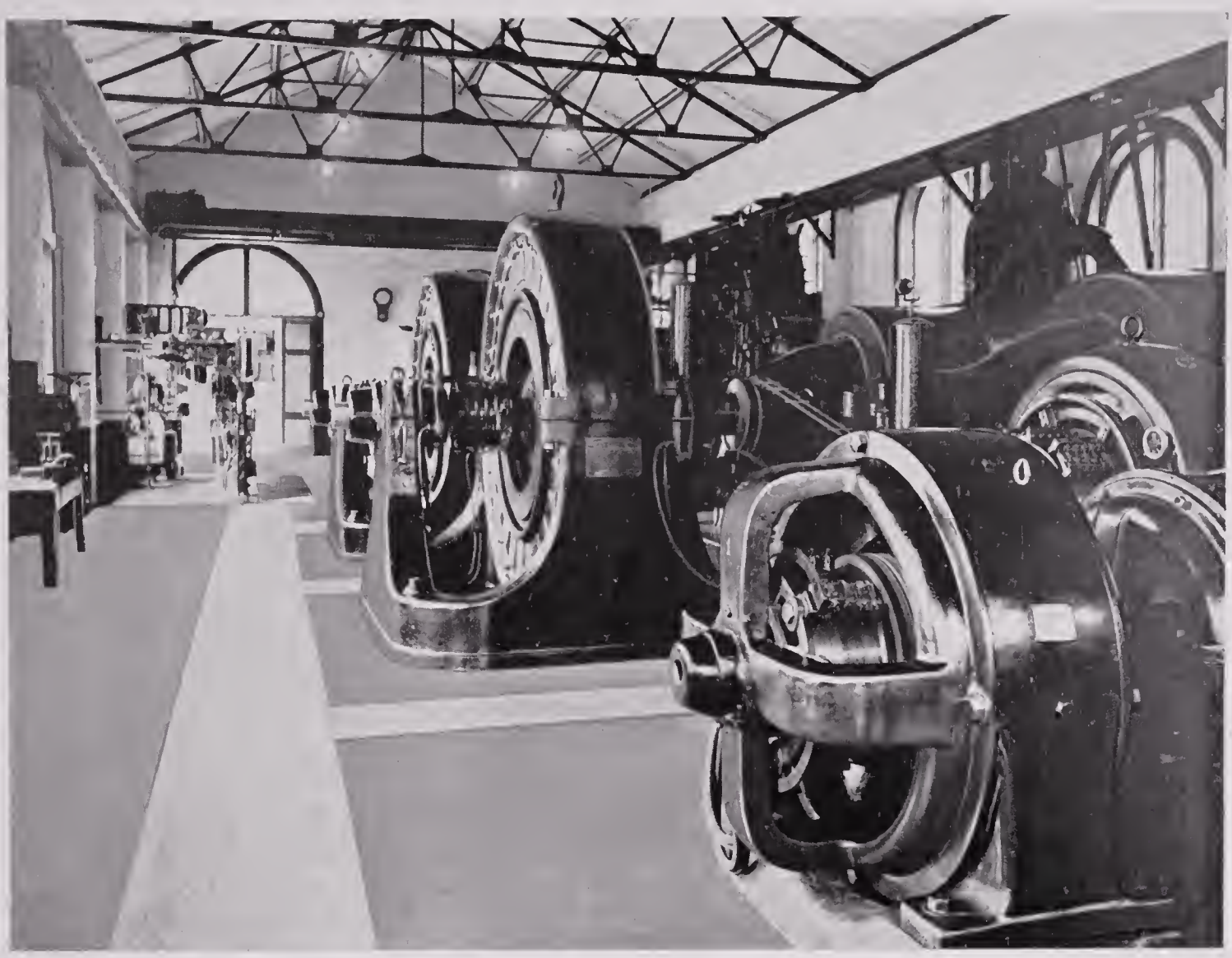
Every electric circuit, whether high tension or low tension for distribution, is provided with lightning arresters and oil circuit breakers to protect against lightning strokes and many other disturbances which might affect the system.

Even though every known device to prevent trouble is provided, troubles will occur at times. We never know when or where the trouble will occur, but, to take care of these emergencies, service men with automobiles are kept in readiness day and night, and when any trouble occurs, whether it be a blown fuse in an individual residence or a transmission line cut in two by lightning, the men are at the scene of the trouble in a few minutes, restoring service. It is hard to realize the number of men who are constantly on the watch to keep the service in its normal condition, and who are ready at all times by their clear thinking, quick action and hard work to prevent trouble or to restore service after an interruption.

Up to this point we have considered only the physical part of the equipment of the company.

Precision Instrument Bench, Electrical Laboratory. All field instruments are tested periodically to insure accuracy

A view of the Electrical Laboratory where electric meters are tested and where other standards are established



Interior of the Hydro-Electric Station of the Utica Gas & Electric Company's Plant at Dolgeville. This plant's capacity is 2,800 H. P.

Mere machines, however perfect they may be, cannot make a finished product from the raw materials. Something more is necessary and that something is intelligent supervision and control.

Back of all the apparatus and equipment are the men who plan the system and constantly supervise its operation. The engineers who plan the structural design and equipment have little occasion to come into contact with the consumer of the service, but on these men primarily rests the responsibility for designing and supervising the construction of plants and lines and placing in them the equipment which will reliably and satisfactorily do the work. The construction men follow the plans of the designing engineers, construct the buildings and other structures and install the equipment. This work must, of course, be done with extreme care and accuracy so that the stations, and apparatus in them, will not give trouble after they are placed in service. After the construction men are through, the operating men take charge of the various devices, and by their constant care and watchfulness keep the equipment doing its part of the work with almost perfect regularity. All of the apparatus is so carefully made and thoroughly supervised that the system is operated with an almost unbelievably small amount of trouble.

This is a view of the stockroom of the Utica Gas & Electric Company. It is maintained at the Cornelia Street Station and contains a complete stock of everything necessary to good service

All of the electric plants of the company are connected together by high-voltage trans-

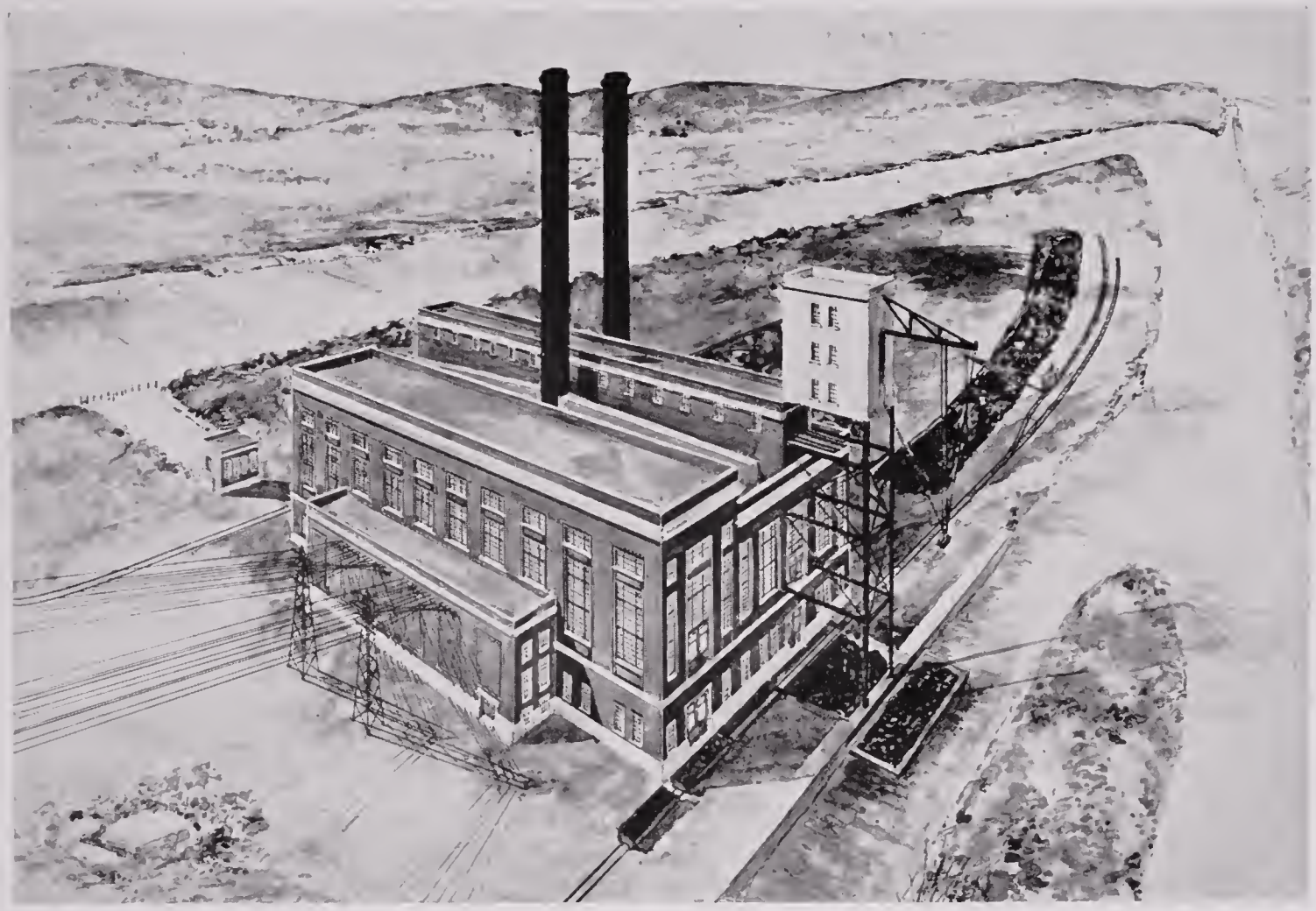
The interior of the Little Falls Hydro-Electric Station of the Utica Gas & Electric Company showing the three generating units in operation

mission lines. Each plant feeds its quota of power into the transmission system, which may be likened to a reservoir, and power is drawn out of the system at any point required. If any plant cannot supply its full power or is shut down, as may occur at Little Falls due to ice trouble, the other plants will make up the shortage and give continuous power in Little Falls as well as elsewhere. One of the duties of the Load Dispatcher is to keep in toueh with all these conditions and to see that there is sufficient equipment in operation at all times to take care of any reasonable contingeneies. However, there are times when even a high degree of foresight cannot prevent trouble.

Like all well-regulated affairs, the system has to depend upon a single nerve eenter for regularity in operation.

This nerve center is at the office of the Chief Load Dispatcher, who, together with his staff, is located at the Washington Street Station. Immediately in front of the Chief Load Dispatcher are certain instruments which instantly register the occurrence of trouble on any part of the system. In each station and substation are numerous instruments, watched carefully by the operators, which show them what is going on. Each generator, line and piece of equipment has its own instruments to show its voltage, the amount of eurrent carried, the frequency and every kind of information neeessary for proper operation and supervision. The intelligent use of the infor-

Warehouse at the Cornelia Street Station of the Utica Gas & Eleetric Company

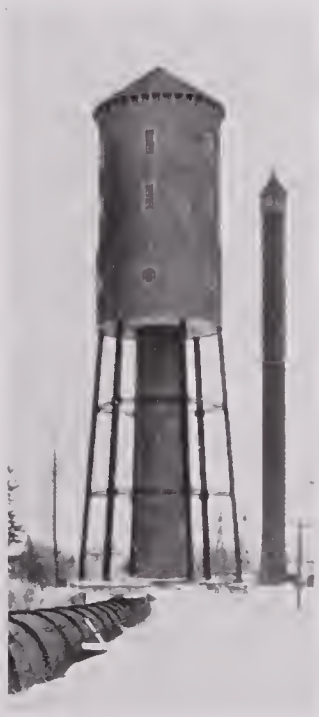


The Utica Gas & Electric Company's proposed Steam Generating Plant at Harbor Point

mation so obtained enables these men to work together as a unit and to produce the refined energy for which the customer pays.

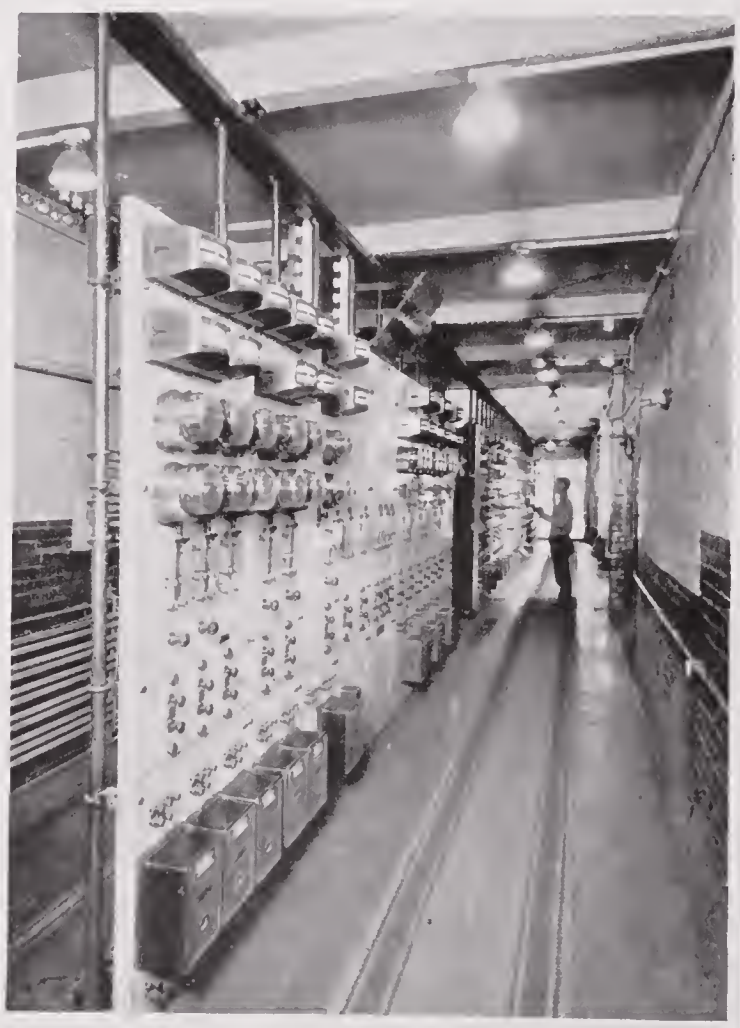
Assume that we were in the Load Dispatcher's Office at the time of a sleet storm up on Deerfield Hill. Without any warning to the Dispatcher both lines were put out of service by the sleet and high wind, thus shutting off all the power supply from Trenton Falls. The Load Dispatcher's Office immediately becomes a point of intense activity. The Dispatcher knew, of course, that the trouble was on one of the high-tension lines, and he made a very quick inspection of his switchboard to see which lines were in trouble. Finding that the Trenton Falls lines were the ones interrupted, he signaled the steam plant to start the turbines and to begin immediately forcing fires under the boilers. In two and one-half minutes from the time of interruption the steam turbines had been brought up to speed, connected to the system and full supply of power was restored. Contrast this with the length of interruption which would have been experienced had it not been for the steam plant. This would have been eight hours forty-nine minutes, because it was not possible to repair the first transmission line and get Trenton Falls transmission connected with Utica in a shorter time.

The surge tank and standpipe at Trenton Falls Station



Each hour a complete report from all the stations and substations on the entire system comes to the Chief Load Dispatcher over the telephone. This report is constantly studied and from it he knows at all times the requirements of every part of the system. He tells the operators in each of the various water-power plants and the steam plant when to put on and when to take off generators; he directs the amount of load to be carried by the different lines and sees that the requirements of each station and substation are fully met.

It is only in case of a total failure of the main power supply that the customers suffer an interruption. Any power trouble on single



The large picture shows the Load Dispatching Room at the Washington Street Station of the Utica Gas & Electric Company. The man in the center of the picture is the Chief Load Dispatcher, who directs the operation of the entire system.

By means of reports coming to him every hour from all the stations and substations, the Chief Load Dispatcher is able to tell the requirements of every part of the system. He instructs the operators in the various water plants and in the steam plant when to put in and when to take off the generators; he directs the loading of the different lines and sees that the requirements of every station and substation are fully supplied. The Load Dispatcher has certain supervisory instruments by his desk which instantly indicate to him the occurrence of any serious trouble in any part of the system.

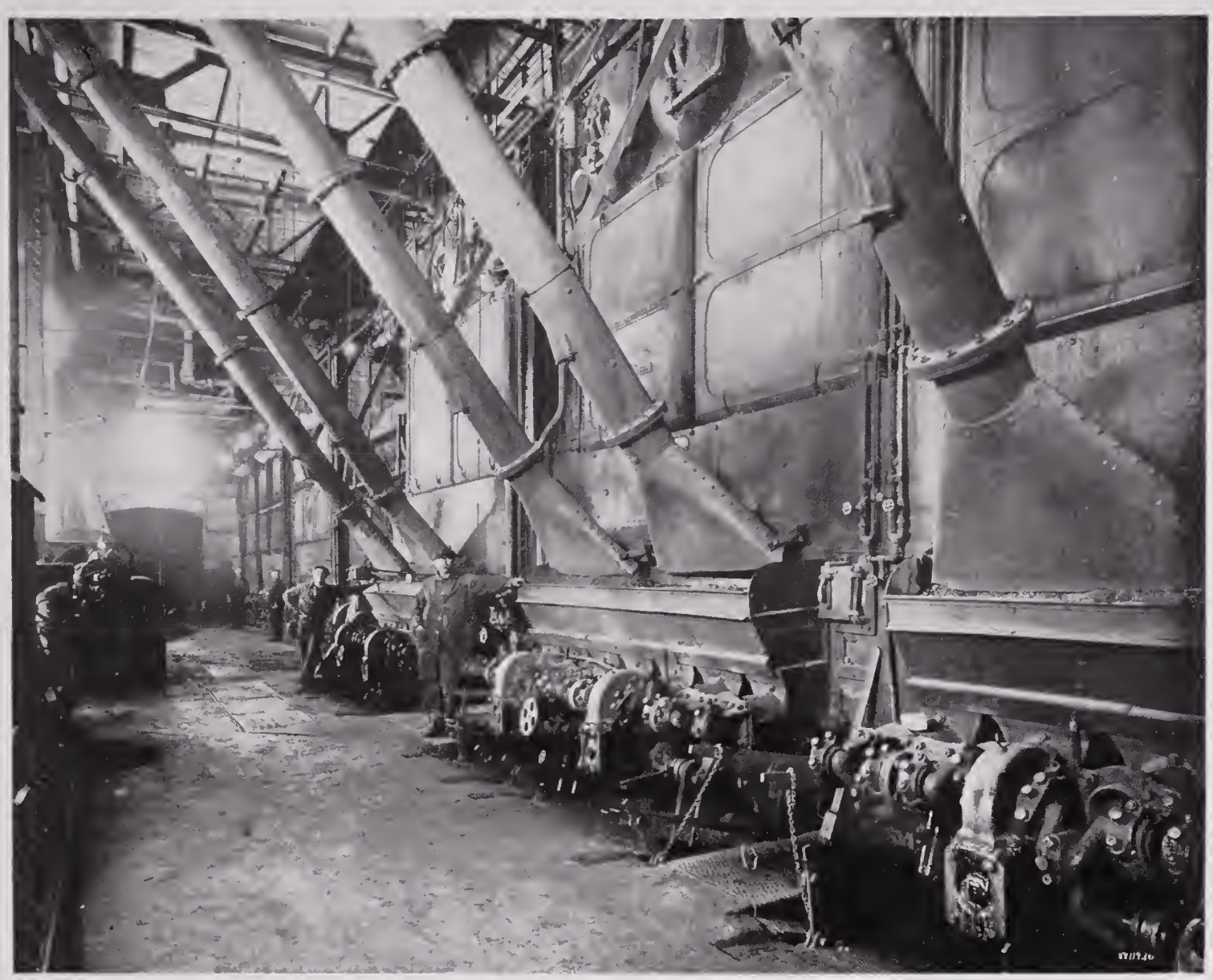
The operators in the stations and substations are constantly watching the meters and indicating devices on their respective switchboards. These meters show the loads and the voltage of every machine, line and piece of equipment necessary to the producing, refining and distributing of the electrical power. By means of these meters the operators are enabled to know at all times the exact condition of the load on the part of the system in their charge.

Every day in the year and every minute of every day the Chief Load Dispatcher, or one of the Assistant Chief Load Dispatchers, is at the desk shown in the picture. How they work and the problems they sometimes face is told in the general discussion.

Every second of every day, throughout the entire twenty-four hours, operators are on watch at every station and substation, for the task of supplying a great industrial center like the Upper Mohawk Valley with the highest quality of power and light is a never-ending one.

Night and day there are trouble men, expert electricians skilled in the needs of the various departments, at the call of the Chief Load Dispatcher and the trouble clerk, and so in every city, town and village to which power and light are furnished by the Utica Gas & Electric Company there is always a sufficient supply of highest quality power to satisfy every demand.

The panel picture shows the switchboards at the Washington Street Station.



The Boiler Room at the Washington Street Station of the Utica Gas & Electric Company. Here are twelve boilers, each with a rated capacity of 650 boiler horsepower, totaling 7,800 boiler horsepower. You will note the clean appearance of the floors. This enterprise keeps its house in order

units or smaller plants is cleared off the lines automatically, and there is no disturbance to the service, since all of the load is carried by other machines or plants.

To the manufacturer of textile goods, particularly, the value of steady, even flow of power at the right voltage and with a constant speed needs no recommendation. To him these qualities are absolutely essential, for his product must have a perfectly even texture. Machines on which such goods are made cannot produce these results unless they are driven at a uniform rate of speed.

These machines are particularly sensitive to wide variations in speed, and many of them are so constructed and work so near to their limiting speeds that they would be wrecked if they should be subjected to speeding up to any extent.

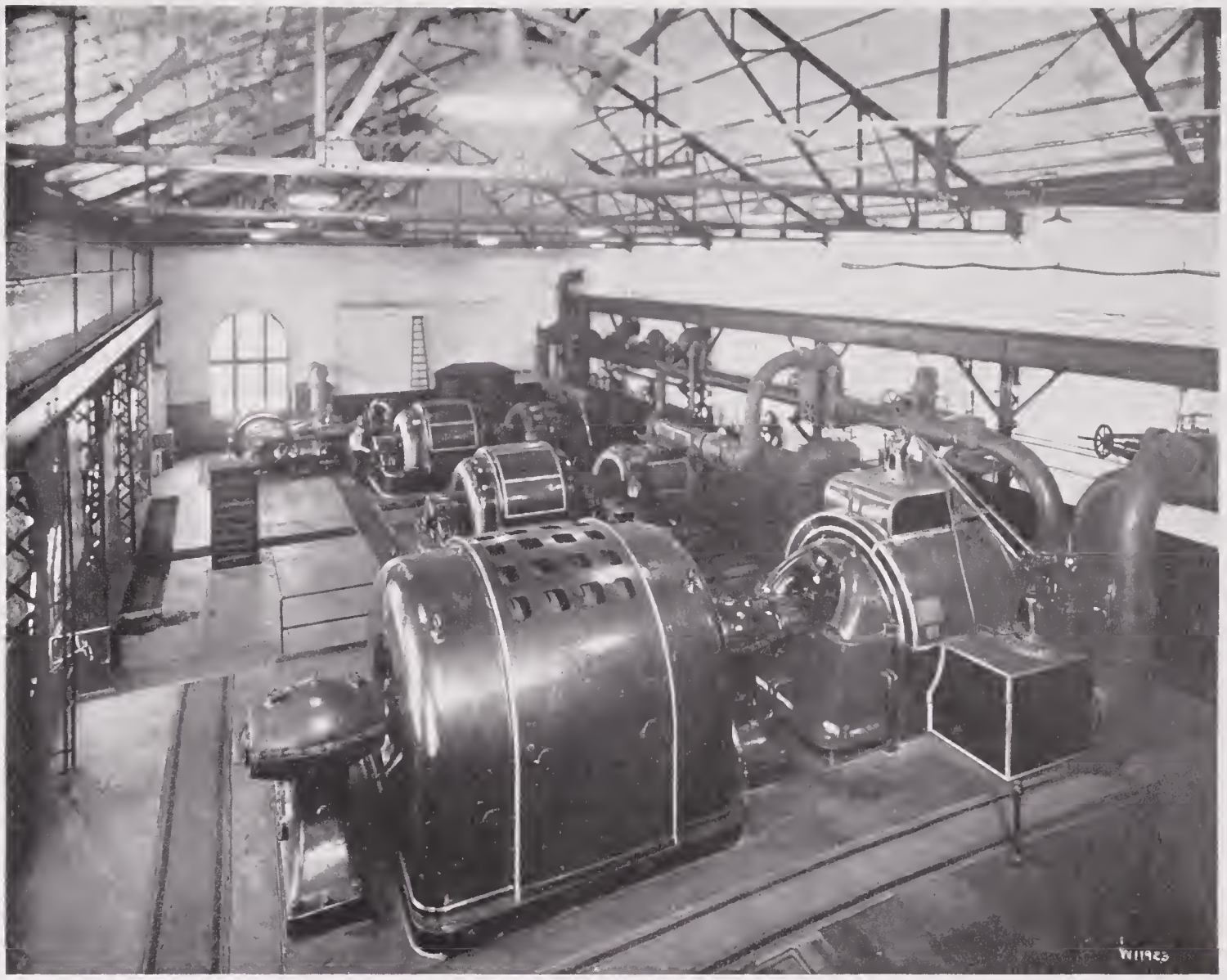
Certain of the processes involved in the manufacture of textile goods also demand that the power be continuous. A stoppage for even a brief period might cause losses of goods in process. Such is the case, also, to a lesser extent, in foundry work and many other lines of business.

In electric furnace work it is also necessary to have steady, even current flowing uninterruptedly in order to produce the proper results. In this work, interruptions for any appreciable length of time have a disastrous effect, as the metal contained in the furnaces rapidly loses its heat and "freezes."

In many other applications of electricity to heating processes, such as the various classes of ovens, a continuous and even supply of current is also absolutely necessary.

In every line of enterprise, it is most essential that the supply of electricity should be constant, and of the proper quality. When this supply fails, or its quality is not acceptable, the industry is at a standstill, while the payroll goes on.

Recognizing the importance of all these factors, every resource of engineering skill and construction has been employed to bring



Steam Turbines at the Washington Street Plant of the Utica Gas & Electric Company. There are four of these turbines capable of producing 26,000 H. P.

the supply of current up to the standard required, in order to meet these conditions. At the source, the water supply and coal supply, requisite to produce electricity in proper quantities, are carefully watched; and every precaution is taken to see that they are available in sufficient quantities so that by no chance shall the supply be interrupted. Constant study is being made of the present conditions and future prospects, with a view to determining in advance what the requirements and the market will be, not only one, but several years in advance, so that proper provision may be made in plenty of time to supply that market. This latter activity alone is one of the most important features, and it is constantly being investigated by the Company's Engineers.

Plans are continuously being made for new developments and new equipment, which may not be needed for long periods in advance. Every possibility is carefully studied in the light of the latest engineering knowledge to insure that when these developments are made they will accurately and fully supply the needs of the time in accordance with the best practice.

So many revolutinary advances are being made at frequent intervals in every field of endeavor that it is not unusual to find it necessary to literally recast the schemes of development which have been more or less perfectly drawn up. Constant research is being carried on along these lines, and every effort made to keep abreast of all advances being made in this field of endeavor.

Refinement in electric service begins at the generating plant with the control of speed or frequency at the generators, and the automatic control of the voltage. As this current proceeds out over the transmission lines, further refinements become necessary at the distributing centers, where the voltage is again adjusted to give proper value at the customers' premises.

So long as all goes well, the customer receives satisfactory service; but in times of storm, and for various other reasons, interrup-

Drafting Room, Field Engineering Department, Utica Gas & Electric Company

tions are bound to occur; and then the human factor as represented by the trouble men and the other branches of service enters into the problem. These men are constantly on watch, and when occasion demands are quickly at the scene of trouble to remedy it.

With all these precautions, with a high grade of apparatus and construction, interruptions on our lines and to the service of the individual customer are extremely few. Research is continually going on to devise means of reducing these interruptions to an absolute minimum, and the most gratifying success has attended these efforts. Interruptions are so few that even the slightest interruption occasions considerable comment, as they occur at most infrequent intervals.

This is what is meant by refined electric energy, as contrasted with raw energy so often supplied in many communities.

During the past few years research has been made into the subject of proper illumination. Careful studies have shown that very greatly increased efficiency and production have resulted where proper illumination has been provided.

We are all familiar with the unpleasant effects of working where conditions of lighting are such as to strain the eyes. This may be caused by either an insufficient amount of illumination, lights improperly placed, or from the glare from bright objects.

A great amount of work has been done toward the establishment of a code prescribing the proper methods of factory, store and office illumination. It is now possible to design illumination which will be effective for any special or particular purpose just as easily as to design a machine or building for a special purpose.

Manufacturers and many others now find it extremely profitable to submit their problems to Illuminating Engineers, and to have their lighting, windows, etc., laid out so as to produce the best results.

The Utica Gas & Electric Company, realizing that its customers might have difficulty in securing competent advice along these lines, has a corps of Illuminating Engineers which is competent to give advice and service of this kind; and this service is available to its customers.

Ninety out of every hundred who read this book will be householders, and power, distributed in the form of electricity, plays just as important a part in the modern house economy as it does in the greatest industrial plants.

Not long ago the electrically wired home was the exception rather than the rule and considered by most of us a novelty and a luxury. Today electricity has come to be recognized as a necessity by people in every walk of life. We have found electricity to be a time and labor-saver, which enables the modern housewife to accomplish more in her home, with less effort and greater efficiency.

Most people are now finding in electricity an element of practical saving, as well as an economical factor, that is aiding them to add years to their lives and enabling them to get more pleasure out of life.

Homes, today, that are not wired for electricity are practically unsalable, and, if for lease, can only be rented to those few who have not come to realize the full value of this time-saving necessity.

Drafting Room, Electric Engineering Department, Utica Gas & Electric Company

The modern housewife demands electricity not because she is extravagant or luxury-loving, but beeause she knows she accomplishes more in her home with less exertion and with greater potency. The head of the house who has the interest of his family at heart wants it, not only because of its illuminating value, but because he knows that it prolongs the life of his wife, enables her to give more time to her children and thus greater pleasure to all.

Where would the housewife be today without electricity? How much could she aceomplish if she had to depend upon the old carpet-beater, the washboard, the flat iron? One might answer that she would be as well off as her ancestors without taking into consideration that the woman of a decade ago was more of a slave than anything else, compelled to live a life of drudgery, working from early morn far into the night.

With the vacuum cleaner, the woman of today goes over her rugs and carpets, cleaning them more effieiently in a few minutes than where hours were spent beating and sweeping a few years ago. Instead of exhausting herself completely by moving furniture, lifting rugs and carpets and taking them to the back yard for the annual house cleaning, she manipulates the electric vacuum cleaner for a short time each week and restores the rug or carpet to its original brilliancy.

The same may be said of the eleetrie washer. Where not so long ago the housewife who did her washing spent the best part of two days getting it out of the way and wasted considerable vitality, the woman of today has cast the health-ruining washboard into the rubbish pile and goes cheerfully and

The Warren Clock, a very delicate and precise instrument used to measure current load. The Load Dispatcher can tell by its registrations just what his total load is at any time. This information is of vital importance to him at all times

As you approach Utica, if you are on the train, you will notice this sign of the Library Bureau, the more so if after dark when it is lighted. There are few people who have passed that way but are acquainted with this name and what it stands for. This is good advertising

The great Hinckley Dam which holds back the waters of West Canada Creek and thus forms the Hinckley Reservoir which has a storage capacity of 3,445,000,000 cubic feet

contentedly about her work, knowing she has a longer lease of life.

Ask her what she thinks of electricity. Try to sell or rent her a home where electricity has not been installed, and you will find how the electric light, the electric flatiron, fan, heater and various other household appliances all play a big part in making her abode "Home, Sweet Home."

Electricity is bringing to the farmer and his wife the advantages of city life. They, too, enjoy illumination by electricity and operate labor-saving devices and other equipment with this concentrated force. To electricity they owe running water, and its associated conveniences, not only in the house, but in the barns and for irrigation. What were farmhouses have now become country homes. Electricity enables the farmer to go about his work of furnishing food for the world a great deal more efficiently and with a large saving in labor. This saving is rightly credited to profit. Some authorities claim that for every farm now electrically equipped there will be ten such farms in the next five years. The farmer who has a power line in his vicinity will find it to his advantage to use electricity in both home and on the farm.

The value of electricity to the merchant is incalculable. He depends upon it for the effective illumination of his place of business. Without electricity, our stores and shops would appear dingy indeed. The revolution in window illumination alone is one of the most remarkable achievements of electrical lighting. There is an almost unlimited variety of lighting effects possible for window displays, and it is possible to have continuously changeable lighting effects or to change the lighting in the windows from day to day, or week to week, as desired.

The advertising value of the electric sign is too well known to require comment. The electric sign is almost entirely changing the aspect of the main street in every city or town in the United States, and is, perhaps, characteristic of American cities. The installation of electric signs is a matter calling for a very high degree of ingenuity, and is a recognized specialty. The problem of making a sign visible from the greatest distance is one which is of the utmost importance in many instances, and is in the province of the Illuminating Engineer.

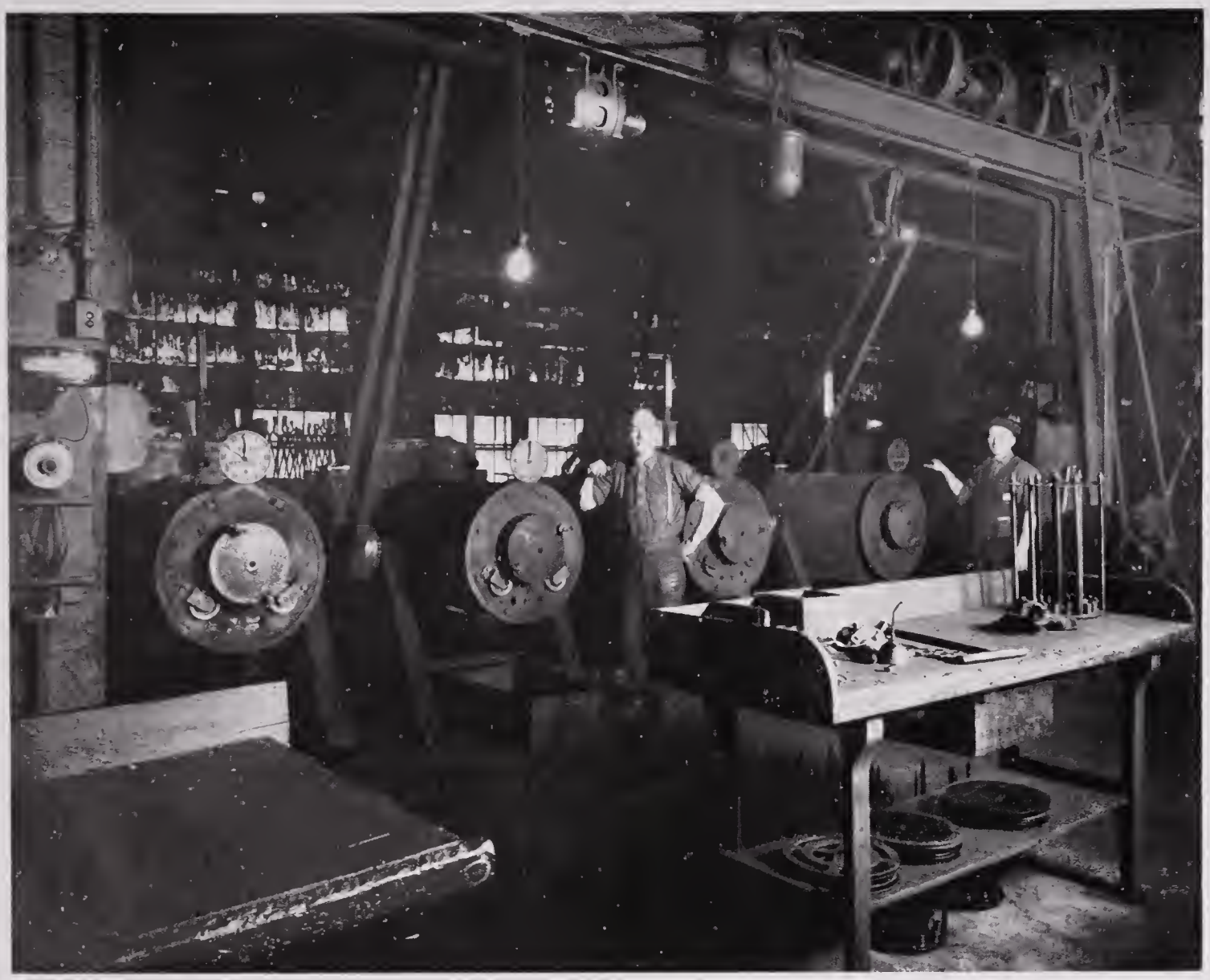
There are many services in mercantile establishments which would be impossible without the effective use of electricity. Take, for instance, the problem of transporting customers from floor to floor. The electric

What would the pioneer settlers of Utica have thought had they been permitted to see such a sign as this, apparently unsupported and visible at quite a distance

These are two interior views of the Service Garage of the Utica Gas & Electric Company. The interior of this garage had to be made in two pictures to give a fair conception of how important a feature the automotive vehicle has become in helping to maintain the highest quality of service back of the highest quality of power. The upper picture shows part of the fleet of fourteen trucks used by the company for various purposes. A large number of the trucks are used by the linesmen who keep the hundreds of miles of wires and the regulatory devices used in connection with the same in order, while others are used by the construction crews which are constantly employed in placing new lines in new territory or enlarging the service lines in other sections. The passenger car fleet, consisting of thirty-one cars, ranging from runabouts to seven-passenger cars, is used for various purposes, from taking trouble men on hurry-up calls to transporting the officials and engineers from one plant to another. The automotive vehicle has proved its worth in helping a public utility serve the public

A service gang of the Utica Gas & Electric Company and truck ready to answer the call of duty

The first automobile truck owned and operated by the Utica Gas & Electric Company



Large, gas-fired, heat-treating machinery at The Savage Arms Corporation. The uses of gas as a cheap, efficient heat is becoming more and more the rule in industry. You will also notice that the machinery is electrically powered

elevator has made possible the conduct of a retail business on all of the many floors of modern buildings, and has made the modern office building a possibility. Electricity has also made it possible to put on the market a large number of devices which are electrically operated, and has increased the variety of products sold by the merchant. There is an endless variety of devices used in mercantile establishments and offices which would be impractical without electricity, such as adding machines, cash carriers, teleautographs, and the like.

The Utica Gas & Electric Company, as the name indicates, is also a large manufacturer, refiner and distributor of gas. We look upon gas in the same manner as we look upon electricity. We accept it as one of our rights, use it, and think little or nothing of what is back of the valve which is turned when we are in need of gas.

The gas we burn today is really gaseous fuel, differing only from coal or wood in its physical state. Each of these fuels and a great many other combustible substances depend more or less on the carbon which they contain for their heating value.

In order to make this gas, a manufacturing plant has been built which is, in reality, a great chemical laboratory, transforming raw products such as coal and oil from their original state into a gaseous substance, cleaning this gas of all impurities and then delivering it to the place where it can be used as the customer sees fit for a great many different purposes. The manufacturing of gas is just as great a revelation to the layman as is the manufacturing of electricity. While electricity has always been accepted as a product, back of which there was a certain amount of engineering skill and scientific knowledge, gas making was regarded as something which was of little import and conducted rather as a trade. As a matter of fact, it requires as high a grade of engineering skill to produce and distribute gas as it does to produce electricity. For this reason a number of technically trained experts are required to conduct

The model electric home. This beautiful modern home was built for the exclusive purpose of demonstrating electrical appliances, their economy and benefits to present-day Americans. Located in Utica, the movement was sponsored by the electrical interest and supported by the whole business community. It is electrically equipped from cellar to garret with the most modern appliances. It was a complete success and a mighty educational force to all who saw it

the manufacturing and distributing of gas on a commercial basis.

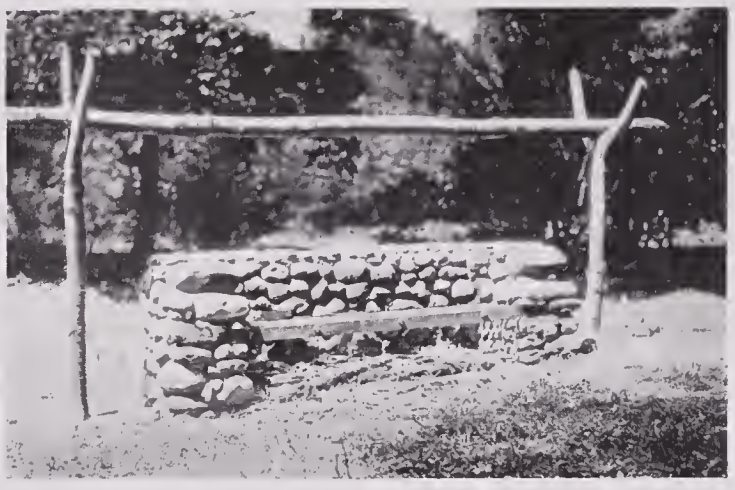
In the water-gas process, used by the Utica Gas & Electric Company, coal and oil are the two products which are used in the manufacture of gas. The coal is brought in on the railroad and unloaded into a storage bin for use in the plant, or piled out in the storage yard so there will be a constant reserve supply to take care of variations in the railroad shipments and contingencies, such as mine and railroad strikes.

The oil is brought in tank cars from the oil fields of Pennsylvania or Texas and unloaded into large storage tanks which will hold sufficient oil to last for at least three months.

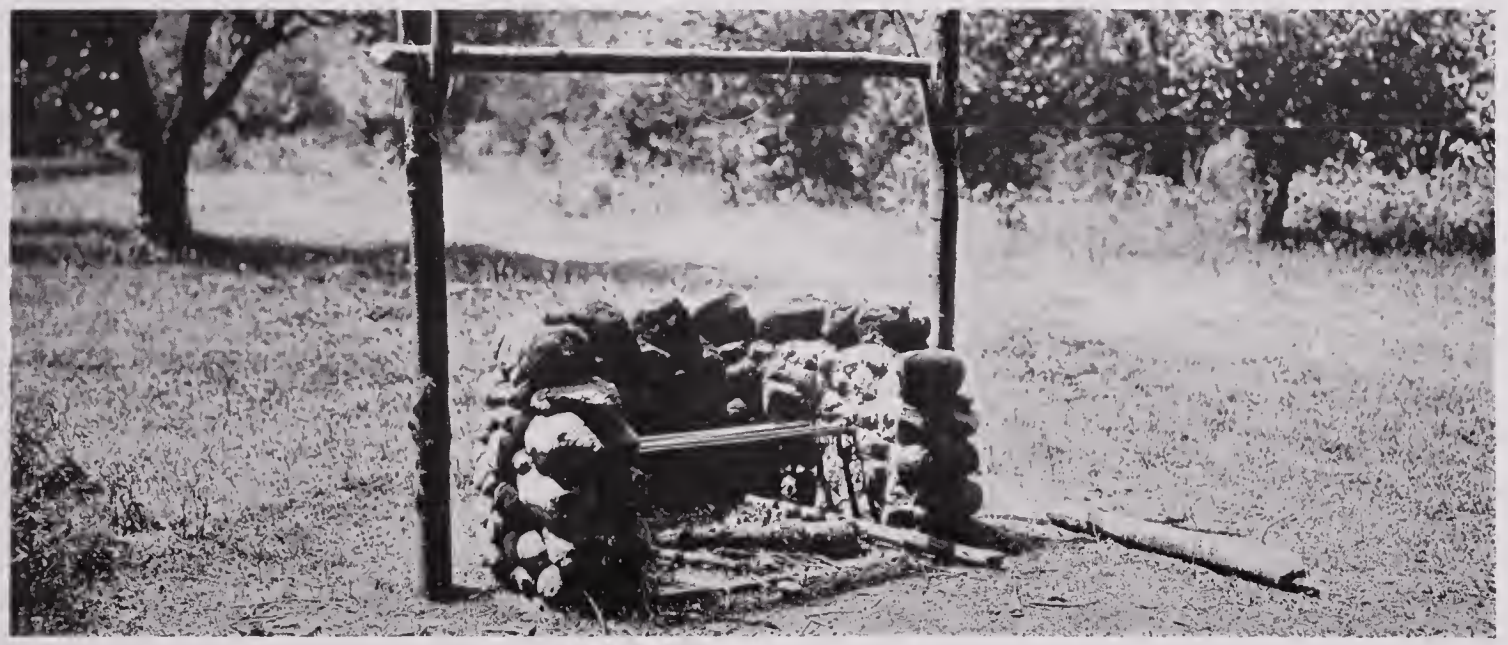
The gas is made in large tank-like machines called water-gas generators by a very carefully worked out process, which requires expert supervision and constant control. The coal is charged into these machines by means of a charging larry, while oil is pumped in through a pipe line in carefully measured quantities. The chemical process itself consists of passing steam through a deep firebed of fuel which is maintained at a temperature of about 1700° F. The steam, under these conditions, is broken up into its component parts of hydrogen and oxygen. The oxygen unites with the carbon in the coal-forming carbon monoxide, while some of the hydrogen unites with the carbon of the coal, forming methane.

This mixture of gases then passes on to the second chamber at the top of the machine, where the oil is added in the form of a fine spray, coming in contact with a fire brick checker work in this chamber. This checker work is maintained at a temperature of about 1450° F. is completely broken up into an oil gas which mixes with the generator gas, forming the raw illuminating gas used by our customers. Periodically the machine has to be reheated in order to keep the correct temperatures in the separate parts of the machine. Delicate temperature-measuring devices are installed in the apparatus for constantly keeping track of these temperatures, and meters are installed for carefully measuring the amount of oil and steam added. One or more of these machines are in constant operation throughout the twenty-four hours, Sundays and holidays, in order that a sufficient supply of gas may be kept on hand to meet the varying requirements of the district covered.

From the water-gas machine the gas passes into a relief holder, which takes care of the fluctuation in the instantaneous rates of making gas and then through the condensers. These condensers cool the gas down to a temperature slightly below the outside temperature in order to remove from it as much of the



Views of Prospect Park on West Canada Creek and overlooking the beautiful Knyrahoora Falls. This attractive natural park is owned and maintained by the Utica Gas & Electric Company. It is used by their employees as an outing place and for picnic grounds. However, it is also open to the public and has only such restrictions as will prevent mutilation and destruction. As many as eight hundred visitors a day have enjoyed the privileges extended by this progressive organization. The company has built a number of rustic ovens, each fitted with an iron grating, upon which one may set pots and pans. Over each is a scaffold for roasting or barbecuing meats. Beside each is a neatly arranged pile of wood of proper length for the stove. Garbage receptacles are provided. Seats and tables are conveniently located in the shade near each stove. A little to the left of the entrance gate and following around the water's edge the ground falls away, forming a bluff. From this vantage point the visitor looks across the gorge and waterfalls, as beautiful as any in this section of the country. As one proceeds up the river he finds that the ground slopes to the water level and merges itself in the valley floor. Here is quiet water for boating, deep pools alive with trout and shallow water in which the children can wade. Altogether it forms one of nature's own garden spots; and that the people of surrounding communities, as well as transient tourists, appreciate it is evidenced by the fact that a large number of people visit it each week. Automobilists desiring to visit this park should drive to the village of Prospect, then turn to the right at the church and public green, taking the Russia turnpike and crossing the West Canada Creek bridge. On crossing the bridge the entrance to the park will be seen at the left. The Utica Gas & Electric Company invites you to visit Prospect Park



Written large upon the evening sky where "he who runs may read" is this sign: Utica Gas & Electric Company. The region it serves has come to know that its watchword is Service

water as possible, as well as tar. From these condensers the gas passes through a long pipe line to the work's pumps, which force the gas through the rest of the condensing system and into the large storage holder.

The great storage holder receives the gas as it is made and provides a place for storage so that, while the gas is made in constant quantities every hour of the day, there is in the holder a sufficient quantity to always supply the requirements of the noon and evening hours, when there is an extra demand for gas for domestic use.

The complete mechanical operation of the plant is in charge of a foreman who is supplied with a gauge board, equipped with indicating and recording instruments showing instantly the exact condition of all the pieces of apparatus in the plant. In this way he is able to constantly direct the operation, and the instant he sees anything whatever in the way of trouble he is able to take care of it at once.

The composition and heat value of the gas is constantly being checked in the Gas Works Control Laboratory. Tests are continually made here of the coal and oil in use and of the gas at various stages of manufacture so as to be sure that each piece of apparatus is functioning properly from a chemical standpoint.

The Public Service Commission has specified that the gas shall be supplied at the value of 537 B.T.U. per cubic feet and the gas is tested at frequent intervals to make sure that this value is constantly maintained.

After the gas is made and placed in the storage holder it is necessary to transport it to each individual user in whatever quantity he may desire to use it. In order to do this the City of Utica and surrounding territory is completely filled with an intricate network of piping. The city demand is fed directly from the storage holder through a large station governor which automatically maintains a constant gas pressure throughout the whole city under all conditions.

The outskirts of the city and neighboring towns are supplied with gas under high pressure at about 30 lbs. per square inch, and this supply is maintained by one or more of the

How effective and result-getting the electric sign is as an advertising medium statistics do not yet show, but certain it is that their number is on the increase

The picture at the top of the page shows one of the power stations of The Cohoes Power & Light Corporation at Cohoes, N. Y.; the pictnre in the center illustrates one of the power stations of the Adirondack Power & Light Corporation at Amsterdam, while the other picture shows an electric power station of the Municipal Gas Company at Albany. These three companies, in connection with the Utica Gas & Electric Company, have followed part of the suggestions as outlined in the Federal Government Superpower Survey and so connected their high-tension systems one with the other that any one company can receive additional power from the other companies if occasion demands. The co-operative spirit through which this reserve power is maintained at all times will prove a valuable asset to the Valley

Bird's-eye view of the Washington Street Station Steam Plant and Gas Generating Plant of the Utica Gas & Electric Company, Utica

large compressors. These compressors pump the gas through the mains to each individual house, where a small individual governor reduces the pressure to that desired by the customer.

Gas is pumped under this high pressure to Frankfort, Ilion, Mohawk, Herkimer and Little Falls. In some of these towns the gas pressure is reduced by means of a large governor which feeds the gas into gas holders. From the holders the gas is distributed through the towns at the pressure used by the customers. In parts of these towns the distribution is done directly from the high-pressure mains.

The gas delivered to the home or factory has to be measured by some type of meter. The meters used by the Utica Gas & Electric Company consist of a tin box containing an intricate and delicately adjusted positive displacement measuring device, which is one of the most trustworthy and accurate instruments on the market today. Records of some of these meters which have been in constant use for over twenty years and then removed show that they are still measuring true to within two per cent. However, in order to make sure of the accuracy of the measurement, each meter is removed from service every seven years and taken to the meter repair shop, where it is completely overhauled and put in first-class condition so far as the repairman knows. It is then subjected to an accuracy test, which is checked by the State Inspector, and, if it is approved by him, it is sealed with the stamp of the Public Service Commission; if rejected, the meter is either repaired to satisfactory adjustment or discarded.

In order to take care of the hundreds of miles of gas mains, the thousands of governors, meters and all details of gas service, and to take care of leaks or remedy troubles as soon as they occur, the company maintains a large group of men equipped with automobiles. In some cases where bad gas leaks occur, as will happen now and then, it is necessary for a man to use a gas mask in order that he may complete the repair without shutting off the supply of gas and discommoding the customers. These men are all highly trained gas men and whenever any trouble or complaint arises they visit the customer's home or place of business and quickly make whatever adjustment or repairs may be necessary.

Gas was first introduced into the United States in Baltimore in 1816 and was considered at that time a very freakish innovation. It was opposed on every hand by superstition and prejudice and even religious scruples. Nevertheless, it continued to be used more and more. Originally it was used entirely for street illumination and for lighting business places and homes. The first gas stove was

Gas Laboratory at the Washington Street Plant, Utica Gas & Electric Company. The company constantly conducts experiments of every charge of gas as it is manufactured to be certain of its purity and quality

exhibited in 1876 at the Philadelphia Centennial by the Royal Baking Powder Company. This stove received a great amount of comment and started the manufacturer to building gas stoves, but it was not until the early part of the present century that gas stoves came to be generally used in the homes. Now they are not only used in practically every home where gas is available, but practically all large hotels and cafes, as well as public institutions, use them for cooking and baking.

The instantaneous water-heater and the range-boiler heater are two applications of gas heating which are rapidly increasing in use. Gas is also being used to a much greater extent for the heating of homes and of large buildings. There is every reason to believe that in a few years the family coalbin and the industrial coalpile will, to a large extent, be a thing of the past in every section of the country where a proper gas supply is to be had.

It has generally been supposed that gas and electricity were competitive services. This is not true, as electricity is being used almost entirely for light and power, while gas has dropped out of this field and is principally used as a fuel to supply heating requirements. In a few cases these two forms of energy overlap, but only in a few isolated cases. Gas and electricity are so closely associated that it is far more practical for one organization to conduct the joint production of the two commodities than it is to produce them through separate organizations.

Producing electricity and gas for commercial purposes is chiefly an engineering business, and so the men who direct the activities of the Utica Gas & Electric Company and many of their subordinates are trained engineers.

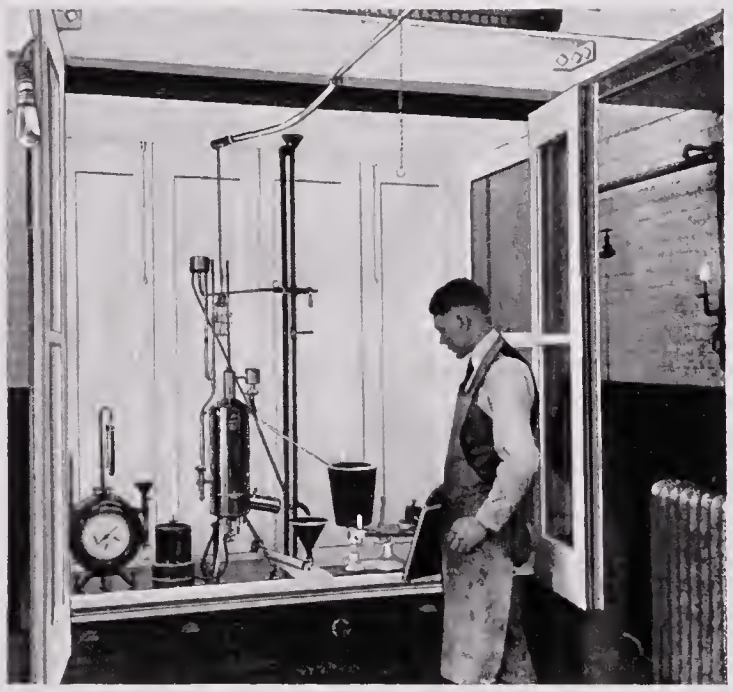
Each of these men has a particular field of activity. Some are in charge of the planning of the work; others in charge of construction, and others in charge of operation and maintenance.

In a business which must grow to be in a position to supply the demands of a constantly expanding community it is necessary to conduct a great amount of research, with a view to planning for the future. A large number of men are regularly employed in this particular work.

The possibilities of future demands for power, the sources of future supplies of power and other means of meeting the demands are continuously under investigation. Every new process of appliance which holds a promise of further economy or efficiency is eagerly investigated and, if found worthy, is immediately put into use. The executives of the company hold that a system or organization, while it may be functioning perfectly today, is never a completed structure, and that only through faithful effort to bring together the very best men and the very best equipment and hold both to the highest standards can the proper service to the customer be maintained.

Realizing that the market for power is ever expanding, the company has, for a long

B. T. U. Testing Calorimeter in Gas Laboratory of Utica Gas & Electric Company



Coal to be used in the production of gas is hoisted into this tower through a conveyor system and fed inside the building into a charging larry

period, been considering the possibilities of adjacent territory and has plans for additional developments which will be made as fast as the market for power requires. Several sites are already owned by the company on which hydro-electrical developments may be made.

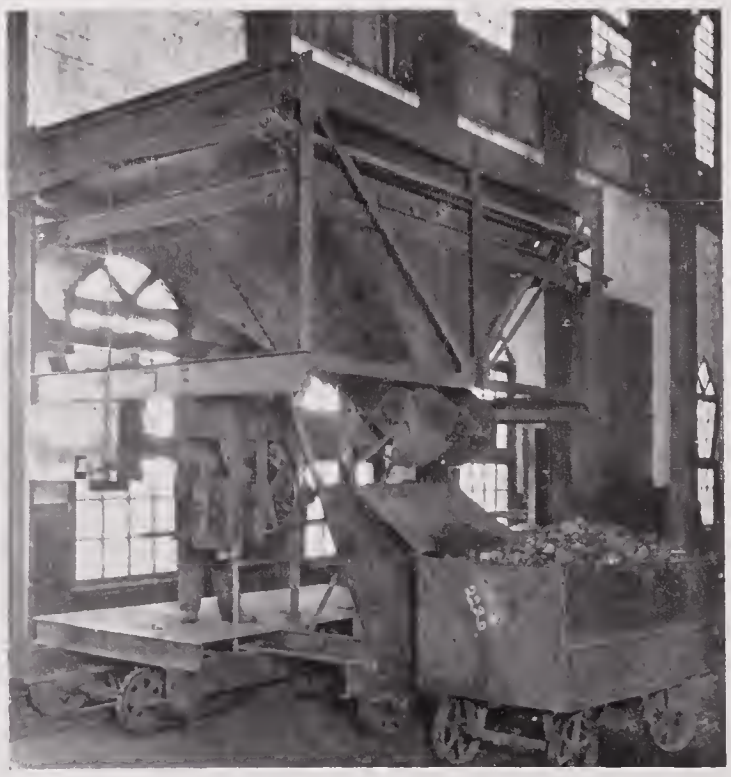
A transmission line is now being built connecting the Utica Company with the Northern New York Utilities. This will provide a new source of power to the Utica Company; and, since the transmission line is run through an entirely different section of the country from any of the company's other transmission lines, there is hardly a possibility of anything occurring which would give trouble on this line at the same time trouble may occur on any of the other lines.

Within the past two or three years a commission of engineers, appointed by the United States Government, has made a study of and a report on the so-called "Superpower System." This is a system of connecting up the large sources of hydro-electric power and steam power in such a way, by transmission lines, that they can to a large extent depend upon one another for power in case the generating plants are insufficient for the service. In the Upper Mohawk Valley this principle has been adopted and has already been put into use through the construction of transmission lines, connecting the systems of the Utica Gas & Electric Company, the Adirondack Power & Light Corporation, the Cohoes Power & Light Corporation and the Municipal Gas Company of Albany. When the connection with the New York Utilities is completed this spring it will also form a part of this scheme of inter-connection.

This system of inter-connection is in full operation, and so each of the companies is in a position to purchase power from the others at such times as power is available. All this is of tremendous benefit to the customers, because it gives them an additional assurance that no extensive shortage or failure of power can possibly exist.

In another section of this book are several pages devoted to a discussion of the industrial growth of the Upper Mohawk Valley, and so it is natural that someone will ask how much power the Utica Gas & Electric Company can furnish the industries of the future. The answer to this question is that the Utica Gas & Electric Company is now able to supply every demand made upon it for power and light, and that it will be adequate to all demands made upon it for some time to come. The time is not far distant when every manufacturing organization, large and small, in the territory served by the company will be using central station light and power. This is not printed in the form of a boast or as publicity, but is a statement of fact, based upon the economic necessity of the manufacturers in every line securing the highest quality of

Charging larry is used to determine the correct amount by weight of coal put into gas generators. It also serves as a transportation unit between coal chute and generators



power at the lowest possible power unit cost.

The time is close at hand when there will be a large number of additional industries in the Upper Mohawk Valley and all these factories will be using central station power.

With the steady, constant growth of the industries now in the Valley, and with the coming of the additional factories, there will be a noticeable increase in the population of the communities now served by the company. This increase in population will mean more homes to light, more streets to light and more stores and offices to furnish with illumination.

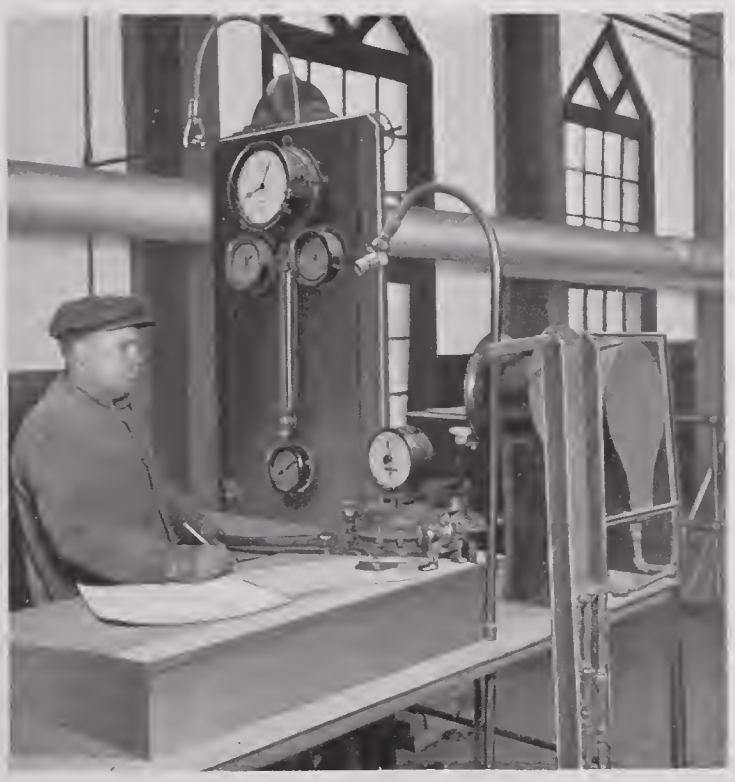
This new industrial growth of the Upper Mohawk Valley may increase the present demand on the Utica Gas & Electric Company two-fold or it may increase it ten-fold, but, regardless of the magnitude of the demand, the company will see that it is filled.

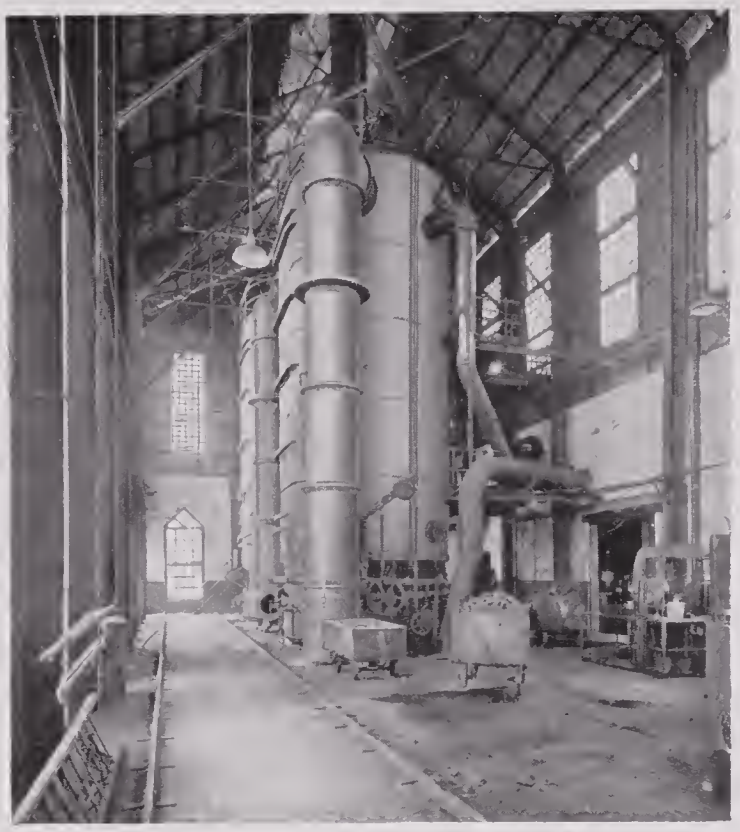
This book is a book of futures. It was written and published by the Utica Gas & Electric Company and every word herein is proof that the company, through its entire staff, has been measuring the future; every word in it is proof that the company is ready, through supplying the highest quality of power, to take its part in this expansion.

The future industrial growth of the Upper Mohawk Valley is not so much a matter of figures as it is a willingness to serve. This company stands ready to serve. True service can come only through men.

The management of the Utica Gas &

The water-gas generator operator. From this position, before his different gauges, he controls the big generators shown in the picture above





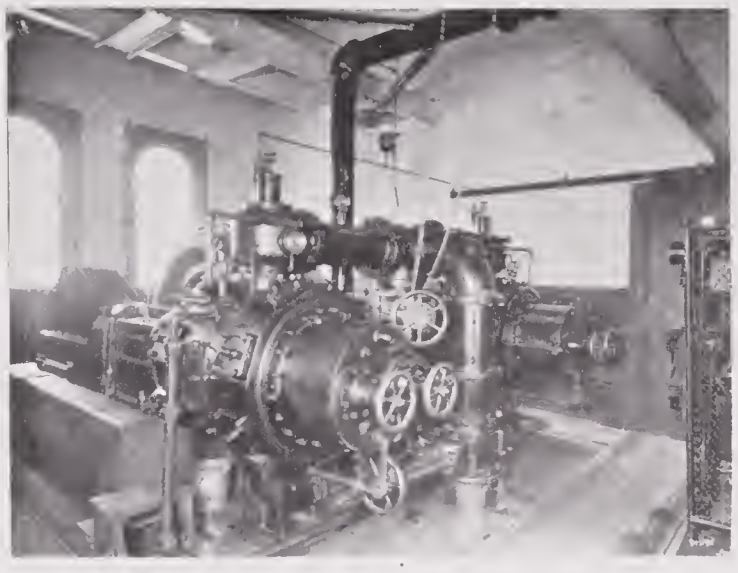
Gas Generators, Utica Gas & Electric Company's Gas Plant. There are four of these generators having a capacity of 3,000,000 cubic feet each per day

Electric Company fully realizes that one of the principal assets of the company and one which directly affects the service to the public is a contented and active staff of employees. The company, therefore, has cheerfully encouraged and supported many activities which tend to develop and maintain a spirit of friendly co-operation on the part of all the employees.

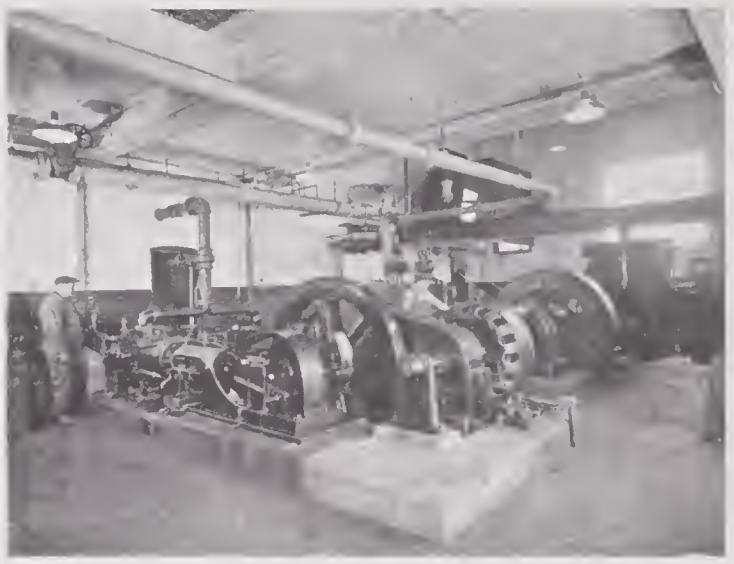
Some two or three years ago a large room in one of the company's buildings at Lafayette Street was transformed into a clubroom. The room has been provided with a moving picture machine, lantern and screen, so that gatherings may be enlivened by moving pictures or lantern slides. There is also a complete kitchen and dining-room outfit and one of the finest dancing floors in Utica.

In the summer of 1919 the employees of the company organized the Gas & Electric Club, and, while it is composed of the majority of the employees and executives of the company, it is an independent organization and self-supporting. The club has monthly meetings, which are usually followed by dancing or some other form of entertainment. It also conducts picnics and outings and has been a great feature in bringing all the employees together, making one acquainted with the other and promoting a spirit of goodwill throughout the entire organization.

The club also has a system of sick and



A high-pressure gas compressor, steam driven, of Utica Gas & Electric Company at the Washington Street Gas Plant



Two electrically driven gas compressors of the Utica Gas & Electric Company. Capacity of all compressors operated is 350 m.c.f. per hour

accident benefits, which are much appreciated by those who have occasion to call upon them, and also a death benefit.

The club is now in its fourth year and during the past three years has paid out the sum of $500 in death benefits and $3,041 in sick and relief benefits. It also has built up an interest account of $2,598, to which other sums will be added as conditions permit. The dues of the club are seventy-five cents per month from each member and the membership now includes many of the employees and officials of the company.

The present membership of the club is 335.

The company for the last several years has provided a Christmas tree with presents for all the younger children of the employees. At the last Christmas tree approximately 1,000 persons, including employees and their families, were present and gifts distributed to nearly 500 children. The entertainment consisted of a moving picture, followed by the giving of the presents, and ended with a dance.

At some time during the summer for the last three years it has been the custom of the company to hold a picnic. The last picnic was held at Trenton Falls and was attended by 1,000 employees, who enjoyed a basket picnic and numerous athletic events, including a ball game.

It is over one hundred years since the Reverend John Sherman, at one time pastor of the Unitarian Church at Oldenbarneveld, built a house which he called the "Rural Resort" at what is now Trenton Falls and invited the public to come and see the beautiful "Leaping Water." Thousands of guests visited this majestic gorge, with its wonderful

Repair Shop, Gas Department, Utica Gas & Electric Company, Washington Street Plant

Gas manufacturing foreman at gauge board, Washington Street Plant, Utica Gas & Electric Company

series of rapids and falls. In the early fifties, a Mr. Moore built a large hotel at the falls. It is possible that as many world-famous people have stopped at this old landmark as any other one place in the country, and, though the falls have lost none of their beauty and are visited by thousands every year, the hotel has passed its days of usefulness and is to be taken down, as visitors find it more convenient to make the short run to Trenton Falls from Utica in an automobile. The site of this hotel and the old historic grounds are now the property of the Utica Gas & Electric Company and it is on these grounds that the company picnics are held. It is the intention of the company when the hotel is razed to build a large casino on the property, to lay out tennis courts, a baseball diamond and other recreational features for the use of the company employees.

Where there are so many employees and so many activities there must be a way other than word of mouth whereby all the employees are regularly informed as to what is transpiring within the organization, so the company started in June 1919 to publish a little paper for the benefit of the employees. The first few issues of this paper were called "The Flash," but in January 1920 the name "Utica Gas & Electric News" was adopted. This paper is issued once a month and is conducted and contributions furnished by the

Scene in the Meter Repair Department, Utica Gas & Electric Company. These meters are required by law to be accurate to two per cent, but this concern keeps its meters absolutely 100 per cent accurate

A gas meter proving machine, Utica Gas & Electric Company, showing operator making a test. This operation determines the accuracy of meter. No meter is passed that is not accurate

officials of the company and the employees and has proved to be very interesting to the entire personnel. The paper is published and distributed to the employees at their homes through the courtesy of the company.

The company has also instituted group insurance and every employee who has been with the company over six months is entitled to participate in this insurance. The amounts of insurance range from a minimum of $500 to a maximum of $1,500. The premiums are paid by the company. This feature is greatly appreciated by the employees and is of particular advantage to those who are overtaken by misfortune and who have only meager funds from which to draw. A number of the employees follow occupations which are classified as extra hazardous and, therefore, they would be unprotected by insurance if it were not for the group plan.

The company goes further than the insurance plan in its relations with its employees. It is the policy of the company to carry all of the officers and employees on either the monthly or weekly payroll and only a few temporary employees receive their pay on the daily basis.

In one of the other chapters of this book it was said that a man must not only possess a willingness to serve, but he must also possess the ability to serve. The reader will naturally judge from the preceding description of the

Gas leak in high-pressure main being repaired by Distribution Department men, Utica Gas & Electric Company. The men are equipped with masks and pure air is forced down by the portable motor

soeial side of the Utica Gas & Electric Company that all the employees are willing to serve and the one question remaining is the ability to serve.

In the Eleetrical Department, for the past two years, an Eleetrical School has been eonduеted and has served to stimulate an interest in eleetrieal studies. During the last year the National Eleetrie Light Assoeiation's course was used and the results were highly gratifying. During the coming year it is planned to give an advanced course. These eourses have been under the direction of the Electrical Engineering Department.

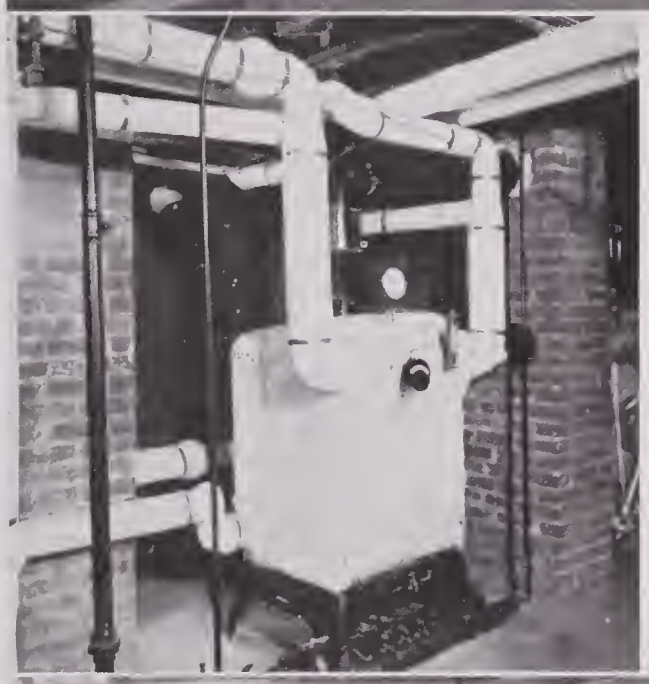
There is more than one way of going to sehool. Aequiring an education is a process which never ends. Doctors hold conventions and elinics so as to keep in touch with the newest thought in their profession; lawyers through lectures and meetings of the bar associations continually promote their profession; and so it is necessary that men engaged in the exacting business of scientifically producing electrical power and gas should constantly keep in touch with all that is new in their profession.

In several of the departments it has been found not only desirable, but essential, to have weekly gatherings of the keymen. In some cases these meetings are held twice a week. At these meetings all matters affecting the common welfare of the department are diseussed and it has been found that a much higher degree of co-operation is thus secured.

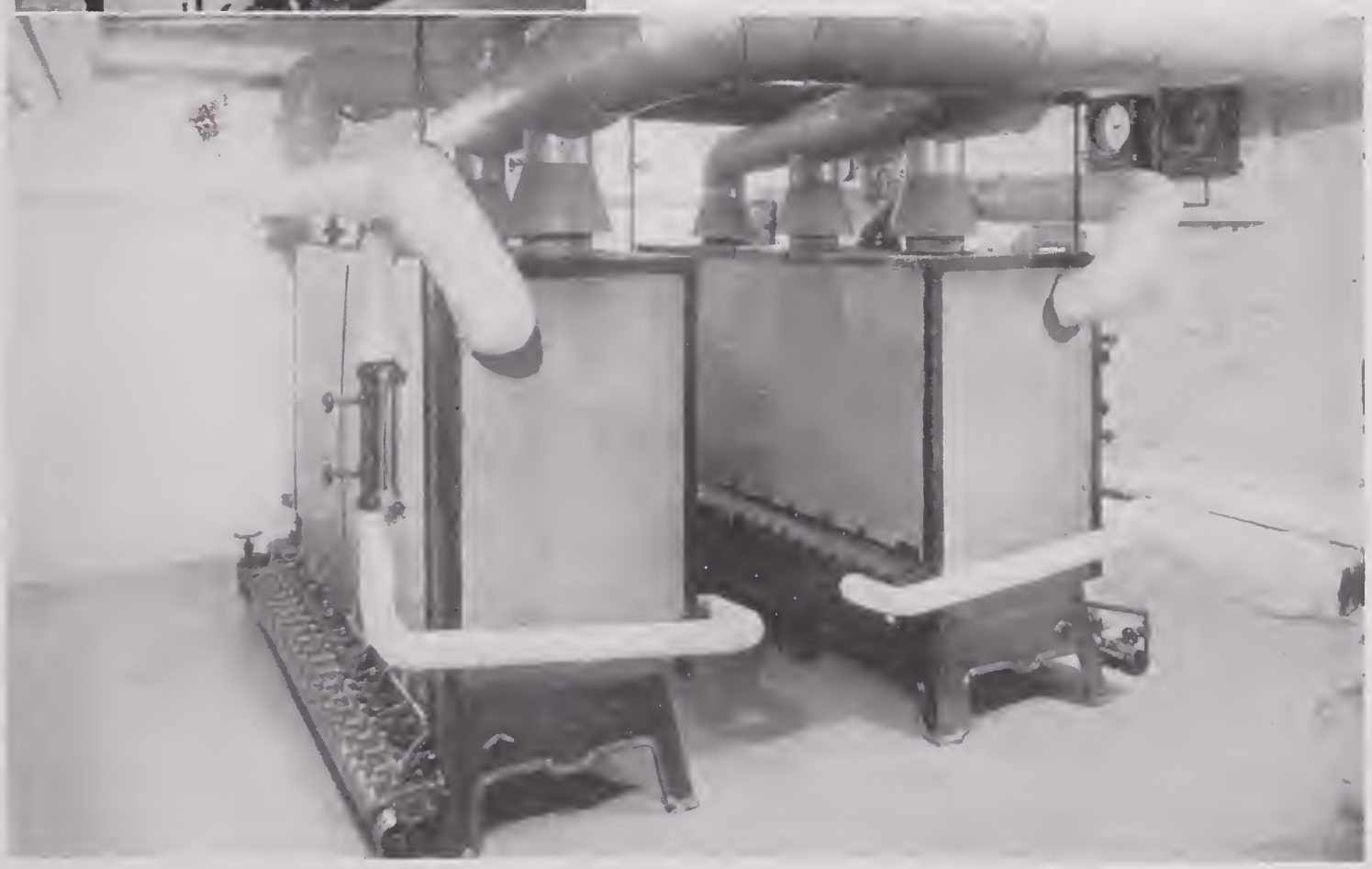
About fifty of the keymen of the company, representing all departments and districts, have been brought together into a Superintendents' Association. This association is composed of the men who fill the chief executive positions, who superintend the work of other men, and those who detail and plan the work.

During the winter this association has monthly meetings. Each meeting begins with a dinner and is followed by a business session, at which some form of entertainment is given, such as a moving picture; after this some subject of interest relating to the business of the eompany is discussed. During the past season these meetings have been conducted by the various departments, each meeting in charge of a different department, at which an outline of the department's activities has been given, and it has been found that this plan has been produetive of a great amount of good, for it has given the men of each department a conception of what the men of the other departments were doing and also helped the men of the department directly interested in conducting the meeting.

Close-up of gas main repairman showing style of mask in use by the Utica Gas & Electric Company. These men patrol about 240 miles of high-and-low-pressure mains



Views showing the practical application of uses of commercial gas. Above is the twenty-four-burner battery of ranges in the Masonic Home Kitchen. Large batteries of ranges of this type are widely used in public and semi-public institutions and in hotels and restaurants. To the left is an installation of gas for heating a private residence. It is, perhaps, this direction, together with the increased uses of gas industrially, that the development of uses of gas will take. The picture tells its own story and, therefore, it is not necessary to go into details or descriptively portray the beneficial results obtained through the modern uses of gas installation and application. Contrast this simple burner, its few gauges and pipes, its neat and clean appearance, its freedom from dirt, dust and ashes, to say nothing of soot and smoke, with the old type of coal-burning apparatus. Below is a large installation of gas-fired boilers for office building heating. The time is not far distant when this method will drive the less efficient and more wasteful methods of heating from the market wherever gas is obtainable



The Company Council is composed of ten men who are all executives and heads of departments. This organization was effected in August 1919. It meets every Tuesday to thoroughly discuss matters connected with the business of the company. This organization has been of the greatest value to the company, not only by establishing closer personal relations, but by giving each member a better understanding of the business, and of the relation of each department to the business.

Many matters of policy are discussed and settled by this organization, while many of the larger matters are thoroughly discussed and recommendations made to the management.

The Board of Directors finally passes upon all matters of consequence relating to the company. The board is desirous of keeping the goodwill of the public which has been established in the past and of increasing it in the future, knowing full well that there is but one way to possess this goodwill and that is to render service and supply the highest quality of gas and electricity.

To do this it must rely on and employ the highest skill obtainable and must also have the goodwill of its employees.

Every member of the organization from the highest official down to the lowest employee realizes that it is only through faithful attention to the service of the public that this goodwill can be realized.

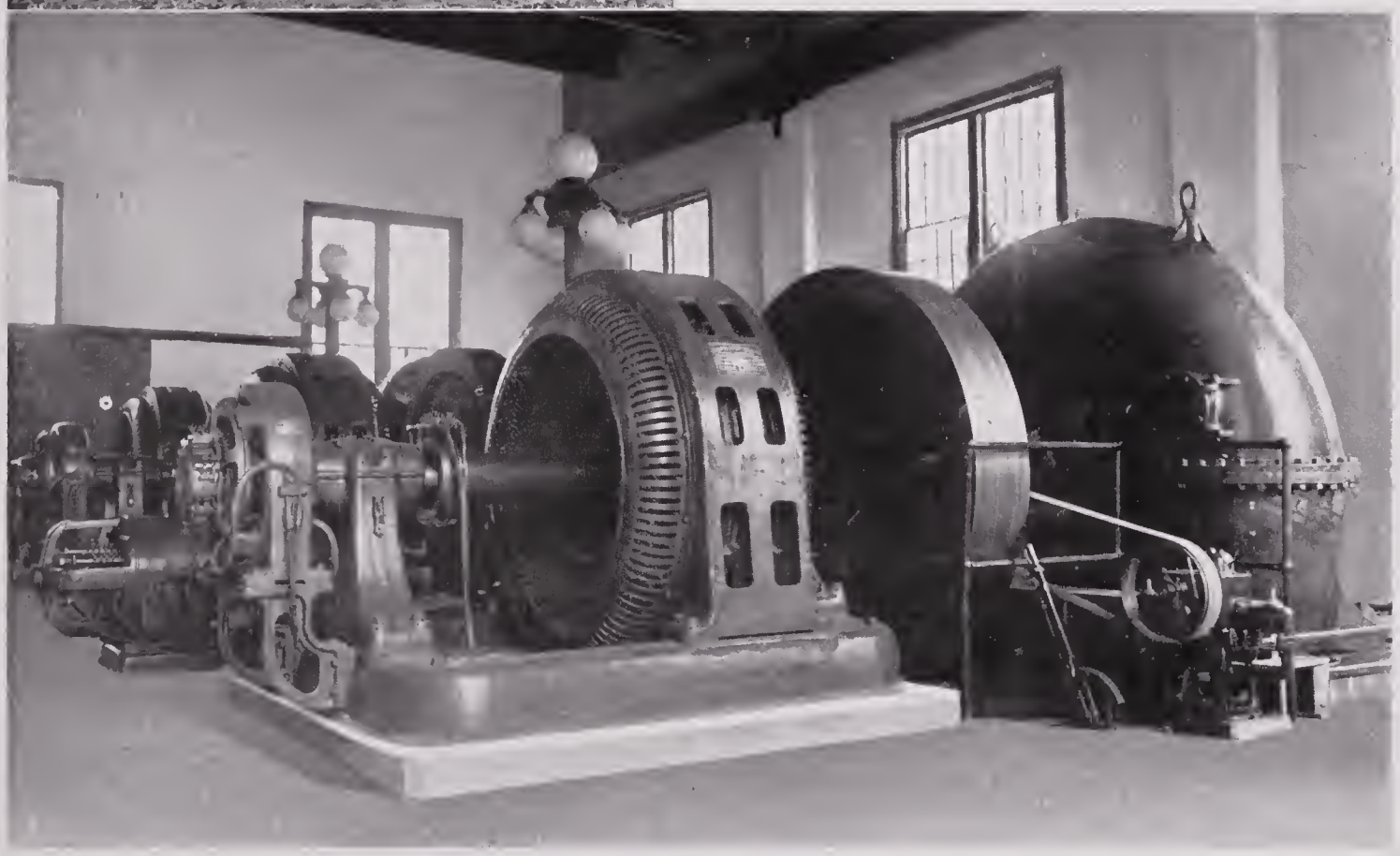
This completes the details of the story of the "Power Back of the Power." It is not the story of an accidental happening, for the processes of manufacturing, refining and distributing the raw power from water and from coal did not come about just because it did. This is not the way the world fills its needs.

Over four hundred years ago Leonardo da Vinci, architect, engineer, painter and sculptor, set down this great fact: that men made great discoveries and invented successful processes only at the time when civilization demanded them. The people of the civilized world had reached the place in the forward march of progress where they needed commercial electricity when electricity came into use and it has been developed to its present day state of commercial perfection to satisfy this demand.

Take away power and our civilization is no more. Take away power and we go back to the day of ox-teams, to the day of pounding grain in a mortar or grinding it by hand between two stones; take away power and we

Type of trench-digging machine used by the Utica Gas & Electric Company in laying gas mains

The Northern New York Utilities, Incorporated, has several new hydro-electric power stations under construction and has contracted to furnish the Utica Gas & Electric Company with 33,000 horsepower when the new stations and the high-tension lines are completed, which will be about June 1, 1923. The illustration at the top shows the Taylorville Station of the Northern New York Utilities, Incorporated, while the picture at the bottom of the page is from a photograph of the interior of the same station and shows two of the turbine-generators. This station has a capacity of 5,400 horsepower. The picture in the center shows several of the officials of the Utica Gas & Electric Company inspecting the tower base at the point where the transmission lines of the two companies will be connected



Having laid the pipes and sealed the joints, the trench is then refilled. This scene shows the closing of the trench of the Utica Gas & Electric Company's high-pressure gas main extension to Frankfort

would have women spinning the cloth on foot-powered spinning wheels wherewith to clothe one hundred and twenty millions of people; take away power and men would still be sawing the timbers into boards with a whipsaw and working from the rising to the going down of the sun.

We have power because we had to have it; we have power because we have great needs which can be supplied only through power; it is only through power that we can have a balanced civilization.

This power did not come through automatic or semi-automatic machines, but these machines came as the result of this power. Power did not come because of great factories employing hundreds or thousands of people, but great factories came because of the power.

This power has made possible the modern quantity production methods and through quantity production thousands of articles which would otherwise be considered as luxuries and their possession limited to a favored few become common necessities and within easy reach of all.

Not only has this power made possible quantity production in the great mills and factories, but it has also brought modern production methods into the small factories and shops. No longer does the cobbler sit at the bench and sew by hand, for the shoe repairing business has become industrialized through power, and machinery, built especially for the purpose, does the greater part of the work. The carpenter jobbing shop is equipped with powered utility tools which permit one workman to do more in a day, and do it better, than it was possible for several workers to accomplish under the old methods. To catalog all the uses made of power through the electrical method of distribution is practically an impossibility in a discussion of this kind, for it leads into the office with the motor-driven adding machines and into the home with its many powered drudgery-removing appliances.

Go back to the old methods of even two or three generations ago and men would again work twelve to fourteen hours a day, while women's work would never be done.

It is because we have great manufacturing plants with automatic and semi-automatic machinery; it is because we have power in shop, store and home, that we work eight to ten hours a day instead of twelve to fourteen hours or even longer. It is because of modern methods of power application that most of us have our evenings to use as we see fit and it is because of the lowering of the hours of labor through power that many of us have a Saturday half-holiday. So modern, central station power reaches out and touches life to a far

About sixty years ago this now empty and deserted building was in its prime and widely known both in this country and abroad as one of the famous summer resorts of the United States. Thousands of the world's most famous people have recorded their names in its register when they came to view the charms of the "Leaping Waters." Moore's Hotel stands a few hundred feet from Trenton Falls and is the successor to the "Rural Resort" built near the same spot thirty years earlier. The hotel stands on the tract of land owned by the Utica Gas & Electric Company and known as the Trenton Falls hydro-electric power development. It will be razed to make way for improvements to the property

greater extent than one imagines at first thought.

When you stop and think of it, our whole social fabric depends to a great extent upon this power. Without modern quantity production methods the present hours of labor would be impossible and the demand for workers under the old system would be so great that thousands of children, thousands of young men and women who are now able to attend school and even the higher institutions of learning would have to be at work contributing their part to the manual labor which has been removed through power.

The creation of this power was not accidental and the maintenance of this power is not accidental. Thousands of men in laboratories and in schools and shops worked for years to make the present method of manufacturing, refining and distributing power through the central-station method a commercial possibility. Thousands of men, many of them with their names written large on the roll of fame, worked for years and years at the task of solving one or another of the multitude of problems which had to be faced before the power could be controlled and sent over the wires in the required quantities and the desired qualities.

Thousands of men, scientists and engineers of the highest order, are at work today, in the laboratory and in the field, investigating and experimenting, in order that the future will be void of the problems still puzzling the technical minds, and that the industry of supplying power of the highest quality from central stations will always be adequate to the demand.

It is these men and the technically trained engineers and the highly skilled, trained workers who are the real Power Back of the Power.

Practically the first business enterprise to realize the attraction value of illumination were the theatres; now exterior lights are in general use on all classes of public buildings, on stores and factories and on churches and schools. The illustration shows the Avon Theatre at Utica at the close of day, just as the lights were turned on

The Utiea Gas & Electric Company maintains a branch office in each city and community it serves for the benefit of its customers, thus assuring the best possible service both in maintenance and replacements. Through these brauches the customers can secure whatever they may need in the way of bulbs, plugs or fuses, together with expert attention to all domestic repair work. They are constantly carrying on the work of education in demonstrating to the people the practical use, convenience and necessity of modern electrical appliances. Above all, these brauch offices form a contact with the various people the company serves and they are an important factor in the general goodwill which has accrued to the company. The public is assured that the managers of these brauch offices and their associates are ready and willing at all times to render any service possible with decided promptitude. The picture in the upper left haud corner shows the interior of the Utica Gas & Electric Company's brauch office at Herkimer, while the picture at the right is a view of the exterior of the same office. The two center pictures show the brauch office at Ilion, the picture to the left showing the exterior, while the one at the right is of the interior. The two lower pictures were taken at Little Falls and show exterior and interior views of the company's branch in that city

Statistics Concerning Utica Gas & Electric Company's System

Trenton Falls Hydro-Electric Plant

Watershed above Dam	375 square miles
Average Flow of West Canada Creek at Dam	1,100 cubic feet per second
Usable Capacity of Pond at Dam	9,000,000 cubic feet
Storage Capacity of Hinckley Reservoir	3,445,000,000 cubic feet
Length of Dam	288 feet
Height of Dam	60 feet
Old Pipe Line, Wood Stave Portion, 7 ft. dia., length	2,680 feet
Old Pipe Line, Steel Portion, 7 ft. dia., length	780 feet
Old Standpipe, 7 ft. dia., height	180 feet
New Pipe Line, Wood Stave Portion, 12 ft. dia., length	2,900 feet
New Pipe Line, Steel Portion, 12 ft. dia., length	1,060 feet
New Surge Tank, 40 ft. dia., 75 ft. deep, 180 ft. high, 12 ft. Riser Connection to Pipe Line	
Gross Head, with Flashboards	272 feet
Number of Units	7
Capacity of Units, Nos. 1 and 4, each	1,350 H. P.
*Capacity of Units, Nos. 5 and 7, each	10,750 H. P.
Capacity of Unit No. 6	8,500 H. P.
Total Capacity of Plant	35,400 H. P.
Transformers in Outdoor Station	9
Transformers in Outdoor Station, Capacity	27,000 K. V. A.

Little Falls Hydro-Electric Plant

Watershed above Dam	1,315 square miles
Average Flow of Mohawk River at Dam	2,650 cubic feet per second
Storage on Watershed	7,600,000,000 cubic feet
Length of Dam	355 feet
Height of Dam	10 feet
Average Head	17 feet
Number of Units	3
Capacity of Units, each	533 H. P.
Capacity of Units, Total	1,600 H. P.
Capacity of Transformers	2,000 K. V. A.

Dolgeville Hydro-Electric Plant

Watershed above Dam	256 square miles
Average Flow of East Canada Creek at Dam	640 cubic feet per second
Storage Capacity of Reservoir at Canada Lakes	550,000,000 cubic feet
Length of Dam	240 feet
Height of Dam	17 feet
Pipe Line, Steel, 10 ft. dia., length	540 feet
Surge Tank, 15 ft. dia., height	48 feet
Maximum Head	72 feet
Number of Units	3
Capacity of No. 1	1,600 H. P.
Capacity of Nos. 2 and 3, each	600 H. P.
Total Capacity of Plant	2,800 H. P.
Capacity of Transformers	2,250 K. V. A.

*Units Nos. 5 and 7 have greater capacity than No. 6 on account of recent improvements in the turbines.

Washington Street Steam Plant

Number of Boilers	12
Rated Capacity, each	650 B. H. P.
Total Boiler Capacity	7,800 B. H. P.
Number of Steam Turbines	4
Capacity, Nos. 1 and 2, each	6,667 H. P.
Capacity, No. 3	10,000 H. P.
Capacity, No. 4	2,667 H. P.
Total Capacity of Plant	26,000 H. P.
Number of Transformers	18
Total Capacity of Transformers	48,000 K. V. A.

Electric Transmission and Distribution System—January 1, 1923

High Tension Transmission Lines	89 miles
Distribution Lines	201 miles of poles
Substations	15
Distribution Transformers	2,656
Electric Meters Installed	24,255
Peak Load, 1922	31,920 Kw.
Output, 1922	101,816,002 Kw. H.
Number of Cities and Communities Served	38

Gas Plant and System

Water Gas Generators	4
Capacity of Generators	5,000 M cubic feet per day
Capacity of Relief Holders	180 M cubic feet
Capacity of Storage Holder	2,000 M cubic feet
Compressors	2 Electric, 1 Steam Drive
Capacity of Compressors	350 M cubic feet per hour
Low Pressure Mains	154.9 miles
High Pressure Mains	84.4 miles
Number of Gas Meters Installed	33,171
Maximum Daily Sendout, 1922	3,358 M cubic feet
Total Sendout, 1922	909,896 M cubic feet
Number of Cities and Communities Served	12

Communities Served with Electricity

Barneveld
Bouckville
Bridgewater
Cassville
Chadwicks
Clayville
Clinton
College Hill
Dolgeville
Earlville
Frankfort
Franklin Springs
Hamilton
Hinckley
Holland Patent
Ilion
Little Falls
Madison
Mohawk
New Hartford
N. Y. Mills
Oriskany
Prospect
Remsen
Rome
Salisbury Center
Sauquoit
Solsville
Stittville
Trenton Falls
Unadilla Forks
Utica
Washington Mills
Waterville
Whitesboro
Willowvale
W. Winfield
Yorkville

Communities Served with Gas

Frankfort
Ft. Herkimer
Herkimer
Ilion
Jacksonburg
Little Falls
Mohawk
New Hartford
N. Y. Mills
Utica
Whitesboro
Yorkville

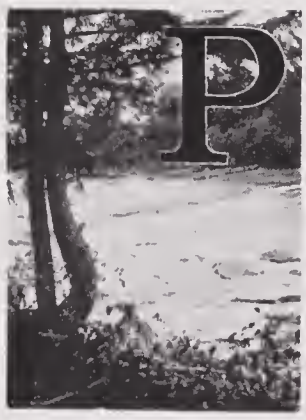
Frank M. Tait
President and General Manager

Frank B. Steele
Vice-President and Associate General Manager

M. Jesse Brayton
Vice-President

George H. Stack
Secretary and Treasurer

Prospect Park



PROSPECT PARK, near the village of Prospect, is the name for eight acres of attractively wooded land on the bank of West Canada Creek and overlooking the beautiful Kuyrahoora Falls. The park is the property of the Utica Gas & Electric Company and was opened to the public early in July of 1922.

The new park is a small section of large land holdings of the company, which at some time in the future will be submerged in the lake or reservoir which will be formed when a dam is constructed across West Canada Creek at this point, preliminary to the building of what will be the Prospect Falls Power Station of the Utica Gas & Electric Company. This plant, when finished, will furnish between thirty and forty thousand horsepower.

For the time being, however, and possibly for some time to come, the land will not be used. It was with this thought in mind that officials of the company decided to permit the public to gain some advantage from this otherwise idle land and to have the pleasure and enjoyment which parks like Prospect afford.

The park is about one hundred feet above the bed of the creek, and the village of Prospect, with the old Hagedorn grist mill, which was abandoned about fifteen years ago, making the center of the picture, forms a delightful and restful view.

The park is somewhat of a precedent for a public utility corporation, since there is not another park of this kind in the state, and few, if any, in the country.

Before opening Prospect Park to the public the Utica Gas & Electric Company built eight field stone fireplaces, with tables to accommodate sixteen people, thus creating eight camping or picnic spots; or, to be more exact, one of the fireplaces is nine feet across and has two tables, each seating sixteen people. The park proved such a popular resort for automobilists and others during 1922 that the company intends to build eleven additional camps during 1923.

The park is conducted with but few rules, regulations, restrictions or reservations. The future policy of the company regarding this playground depends entirely upon the use the public makes of the park. The nearest approach to regulations is the request contained on a signboard at the entrance to the park, which asks the visitors' assistance in keeping the park in good order, leaving it in the same condition in which they would desire to find it.

Lobby, Main Office, Utica Gas & Electric Company, Utica. Polite, intelligent service has built a splendid spirit of goodwill toward this company by the people and firms it serves

Customers' Accounting Department, Utica Gas & Electric Company. Expert accountants and a highly trained office staff enable the company to render prompt service

Prospect Park is in charge of the superintendent of the Trenton Falls district of the Utica Gas & Electric Company, who will be pleased to receive suggestions of a constructive nature.

Each camp is numbered, but the company has decided upon a "first come, first served" policy, and none of the camps will be reserved except on Saturdays, Sundays and holidays. At the far end of the park, along the stony shore of West Canada Creek, a stream of pure, clear water has been piped; adequate lavatory facilities have been provided and there are garbage receptacles at every camp.

A large number of letters of appreciation have been received by the company and by the superintendent of the Trenton Falls district. The first letter is from the Business Men's Class of Central M. E. Church of Utica, and is signed by the president, Mr. George E. La Due. It reads:

"Saturday afternoon, September 16th, 1922, seventy-seven members of the Business Men's Class of Central M. E. Church, Utica, held an outing at Prospect Park. The men voted this outing easily the best of the summer; and this was saying quite a little, as we had previously held two very successful outings, one at White Lake in July and the other at Marcy in August.

"The men felt that much of the success of our September outing was due to your courtesy and helpfulness in getting your Camp No. 2 fitted up to take care of such a large crowd.

"We were all very much delighted with the park itself, and desire to express our commendation of the Utica Gas & Electric Company for its thoughtfulness in fixing up such a beautiful place for the use of the public."

The next letter is from Professor H. D. Doolittle, principal of the Trenton High School at Barneveld:

"Please accept the thanks of myself and faculty for the use of Camps Nos. 1, 2 and 3 at Prospect Park on September 28th.

"We found it an ideal place for a school picnic. The cleanliness and safety of location are exceptional features.

"The young people all had a fine time. It might be of interest to note that, when I asked the children where they wished to hold their picnic, the unanimous vote was Prospect Park.

"Too much cannot be said in praise of the Utica Gas & Electric Company for its efforts to provide so fine a recreation place."

"Three times this summer it has been my privilege to enjoy a picnic supper at the park in Prospect," writes Mrs. Mabel C. Baker of

The Company Council of the Utica Gas & Electric Company is composed of the Vice-President, the Associate General Manager, the Secretary-Treasurer and the eight departmental heads

New Hartford. "Each time I have gone with a different party and each time we all have been very enthusiastic over the beauty of the spot, over the generosity of the Utica Gas & Electric Company in providing such a place for the public, and over the excellent condition in which we found everything. The wood prepared, fine and large, seemed to me the last word in care and generosity.

"Last Saturday some seventy from our Presbyterian Sunday School of the village (Mrs. Baker is superintendent of the school) enjoyed an afternoon picnic there, making use of fireplace No. 2, with its three large tables. It was splendid to have the commodious fireplace, as we were both boiling and roasting frankfurters.

"In the name of our school and as spokesman for the other two groups of friends, I wish to thank the Utica Gas & Electric Company."

Here is a letter from the next-door neighbors of the company, the Congregational Church at Prospect. It was written by Eleanor M. Williams:

"In the name of the Prospect Congregational Missionary Society, I wish to thank you for the privilege of having our picnic at Prospect Park. We appreciate the kindness of the Utica Gas & Electric Company in opening it to the public after spending so much time on improvements.

"The natural beauties of the place, the basin with its picturesque falls, the creek with its wooded bank, the cold spring water bubbling from the rocks, as well as the convenient fireplaces with their iron grates, and the tables and benches close by, make it an ideal picnic spot."

These are only a few of the many letters of appreciation of Prospect Park that have come to the Utica Gas & Electric Company. Perhaps the best expression of the value of Prospect Park is the report of the superintendent of the Trenton Falls district, made to the company at the close of the season:

"The park proved to be a very popular retreat. During the months of July, August and September, I estimated that there was an average attendance of at least between five and six hundred people per week. The largest attendance was on Sunday, as there were several Sundays when it was estimated that there were three hundred people in the park.

"The people were quick to grasp the privileges of the park and the report of the advantages spread rapidly, not only in this county, but in other counties, as I personally met people there from Boonville, Lowville, Remsen, Hinckley, Holland Patent, Stittville, Barneveld, Poland, Newport, Middleville, Herkimer, Dolgeville, Little Falls, Washing-

Secretary and Treasurer's Staff, Utica Gas & Electric Company

Electrical Engineering Department Staff, Utica Gas & Electric Company

Gas Department Staff, Utica Gas & Electric Company

At Trenton Falls, the Utica Gas & Electric Company will construct this pavilion for the use of its employees in the various social activities that the company fosters for them. In connection with this there will be baseball diamonds and tennis courts

ton Mills, Clayville, St. Johnsville, Clinton, New Hartford, Sauquoit, Whitesboro, Oriskany, Rome, Vernon, Frankfort, Ilion and Mohawk.

"It proved very popular, particularly to the people of Utica and outlying districts, as they not only came once, but made it a weekly trip. There were also many out-of-state tourists who took advantage of the park to stop for luncheon.

"There were many clubs and societies which had outings at the park. Among them were South Trenton Church and Sunday School, Methodist Church of Stittville, the Remsen Masonic Lodge and Mappa Chapter O. E. S., Newport Chapter O. E. S., Unitarian Church and Sunday School of Barneveld, the Unity Club of Barneveld, the Presbyterian Sunday School of New Hartford, the teachers of Sayre Memorial Church of Utica, the Men's Club of Central Church of Utica, the Moriah Society of Prospect, the Trenton Union School, Mr. Ray Barber of the New York Mills Corporation and party of twenty-five, and other large parties and societies of which I have no record.

"In conclusion, I wish to state that everything ran very smoothly at the park. I did not have one complaint about anything. The public did not abuse any of the park's privileges and we had no instances of having to clean up after a party at any of the camps."

Autoists bound for Prospect Park, from Utica, upon reaching the village of Prospect, should turn to the right at the church and public green, taking the Russia turnpike, and the entrance to the park will be seen to the left after crossing West Canada Creek bridge.

Once a year the Utica Gas & Electric Company takes its employees and their families to Prospect Park, Trenton Falls, or some other picnic grounds, for a day's outing. This picture shows the transports receiving their load of joyous picnickers

Commercial Department Staff, Utica Gas & Electric Company

Outlying Districts Department Staff. Utica Gas & Electric Company

Purchasing Department Staff, Utica Gas & Electric Company

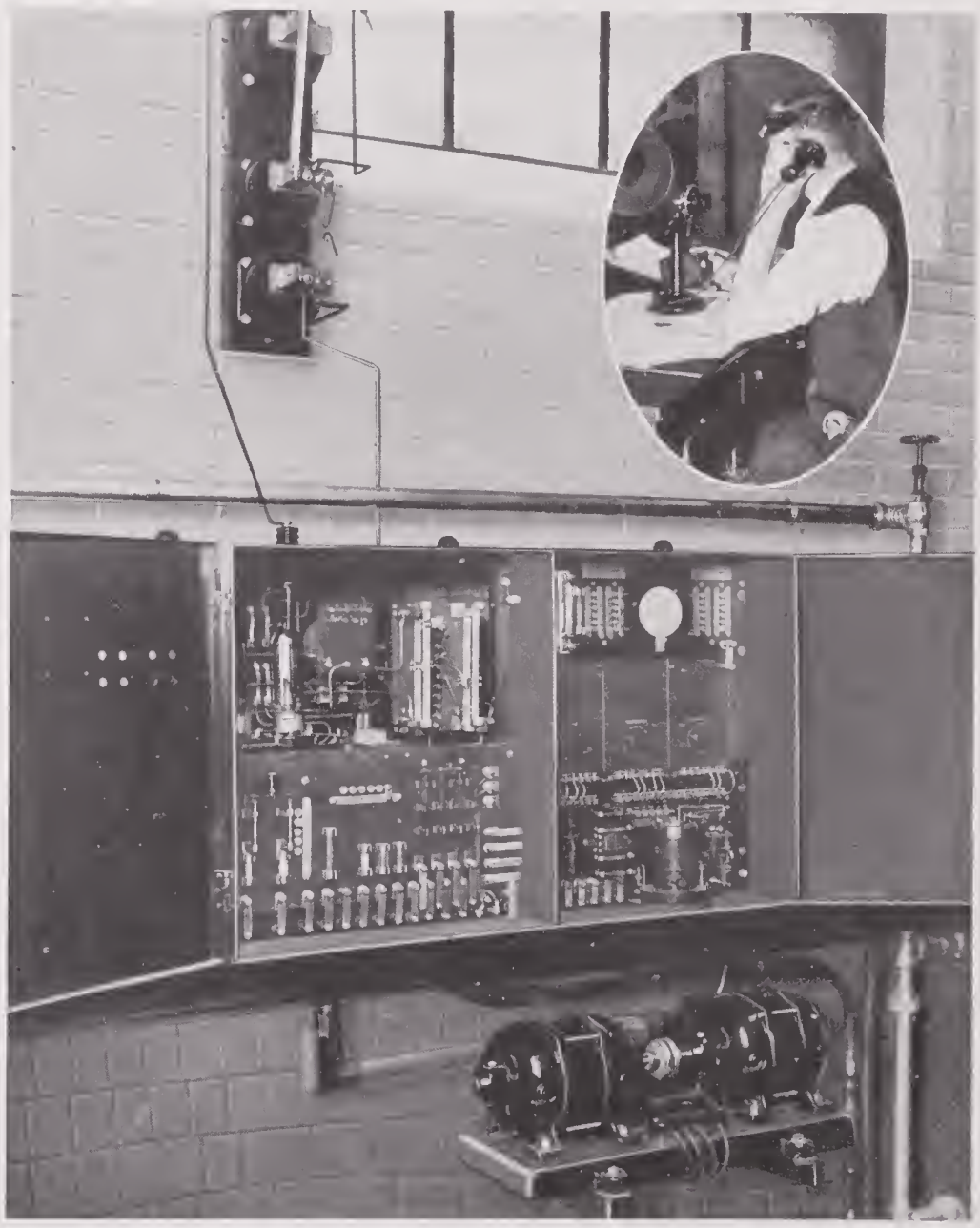
The "Wired Wireless"

THE large picture shows the apparatus which controls the carrier current or the "wired wireless" telephone between the Chief Load Dispatcher's office at the Washington Street Station of the Utica Gas & Electric Company and the Trenton Falls Power Station of the company about fourteen miles away. The insert shows one of the Chief Load Dispatcher's staff talking over this new system. This telephone, the first of its kind in the world, was placed in service early in December of 1922. The voice, very audible and every word distinct, traveled from Trenton Falls over the regular high-tension lines of the Utica Gas & Electric Company after jumping a gap from an antenna near the power station to the wires and making another jump to a second antenna at the Washington Street Station in Utica. The sound vibrations come right along with the current that is generated at Trenton and distributed from Utica.

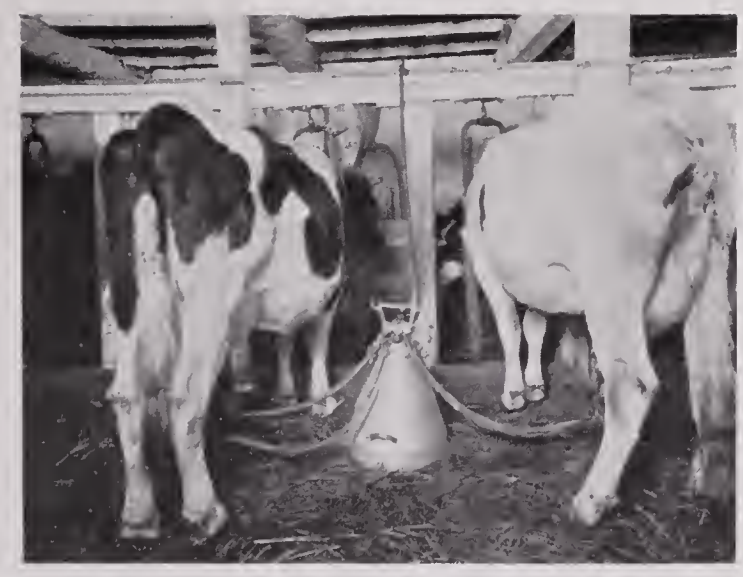
The outfit is the equivalent of a radio set, with the exception that the voice does not radiate through space. It combines advantages of radio and the ordinary telephone and overcomes difficulties experienced with both the other methods of transporting sound. There is little if any chance of it ever getting out of order; no delay is experienced in putting through calls; quality of speech is much better; static, the bugaboo of radio fans, is entirely eliminated and external disturbances that might be caused by radio transmitting stations are impossible.

With this outfit, the Utica Gas & Electric Company has been able to materially improve its service. Formerly, during a great sleet or windstorm, its transmission wires between Utica and Trenton Falls would oftentimes blow down, the breaks not only cutting off the power from the Trenton Falls plant, but putting its private telephone system out of commission, and on several occasions affecting the lines of the New York Telephone Company to such an extent that Trenton Falls was entirely cut off from outside communications with the world.

No matter what happens now along this line, the Chief Load Dispatcher will be able to communicate with Trenton Falls Station,



The carrier current or "wired wireless" telephone equipment in use between the Washington Street Station and the Trenton Falls Station of the Utica Gas & Electric Company



Electric milking machines have greatly increased the value of the farmer's time and decreased his labor charge

While the cream separator has decreased the percentage of wasted butter fat and increased his profit

for the "wired wireless," although dependent upon the high-power lines for voice transmission, will follow the wires whether they are up or down, grounded, whole or broken. Like the radio, it transmits through space; but, unlike the wireless telephone, the voice will follow the wire that conforms to its wave length.

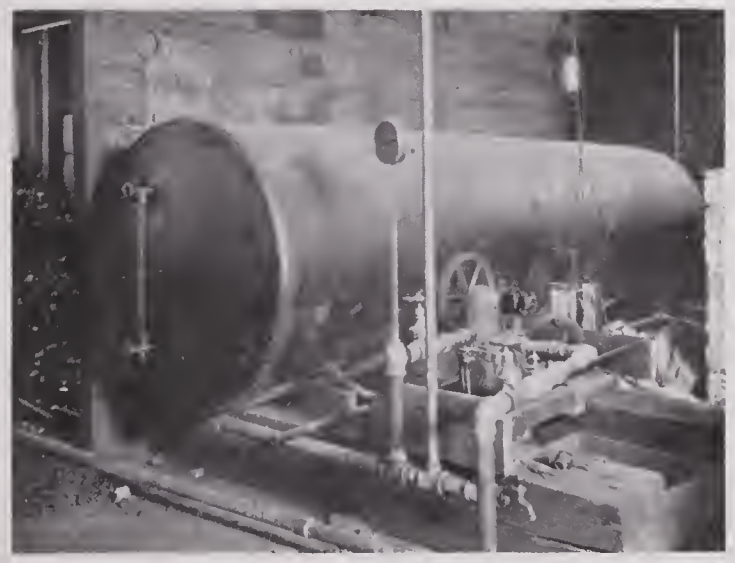
Portable sets will enable the linesmen working on the transmission lines between the two stations to get in immediate communication with their superiors. They can do this now with the private telephone line, but following storms this line is usually out of order, handicapping the men in communication with headquarters.

Identical sets are installed in each station. Just outside the Washington Street Station and between two of the high-tension line towers a short antenna has been installed. This directly connects with the apparatus. A similar arrangement exists at the Trenton Falls Station. When the system is in operation, the voice jumps from the antenna to the power lines above, follows them to the other end of the line, makes another jump to the antenna there located and then transmitting itself into the telephone instrument.

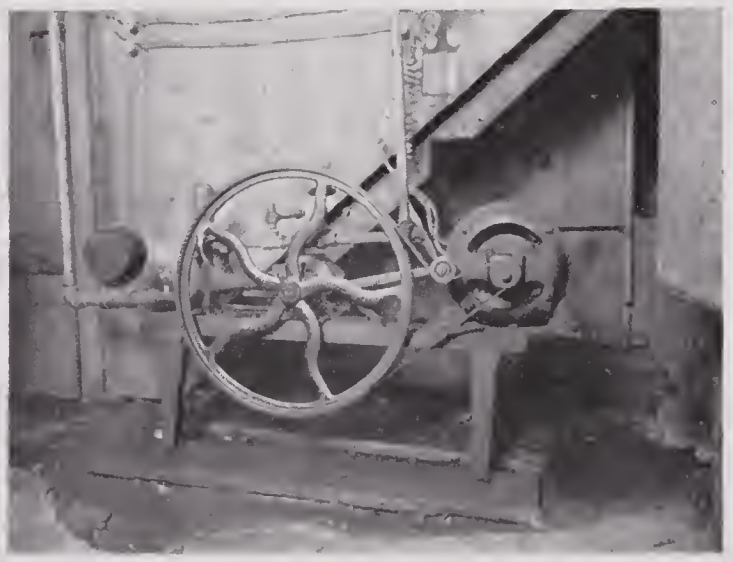
With the portable outfit, the men on the road will simply string an aerial from one tower to another, or to a tree nearby, connecting with their set and start the conversation.

The outfit does not require any special knowledge of radio or telephone apparatus to operate. A small switch connected with the telephone instrument does all the work. One calling on the phone, before taking off the receiver, takes hold of the switch and moves it upward. This action sounds a bell or buzzer at the other end of the line and the switch

Farmhouses in progressive communities no longer depend on the spring and the old oaken bucket for water. They install an electric powered water supply system like the one shown in the picture below



Another form of water pump directly connected with source of supply and forcing the water into the distributing system. The old bucket-and-tin-pan outfit has gone by the board on the modern farm



This photograph shows the Superintendents' Association of the Utica Gas & Electric Company at one of its monthly dinners in the company's auditorium. The association is composed of the keymen of the company and the dinners are followed by meetings at which one or more subjects of general interest to the entire organization are thoroughly discussed. There is a splendid spirit of co-operation at all of these meetings and a fine feeling of goodfellowship

automatically goes back to its neutral position. The operator takes off the receiver and listens. The voice on the other end of the line comes floating through the receiver and the conversation begins. To listen, the operator leaves the switch in the neutral position, but when he wants to talk he moves it downward. That is all there is to it.

There is no way in which outsiders can "listen in" to the conversation, privacy of communication being absolute. Unlike the radio, the operator is not required to watch at all times to receive calls, the call bell system eliminating this. Elaborate and expensive aerial systems are not required.

The carrier-current system eliminates the installation and maintenance of a telephone wire and makes possible telephoning through a section where the lines are down and grounded.

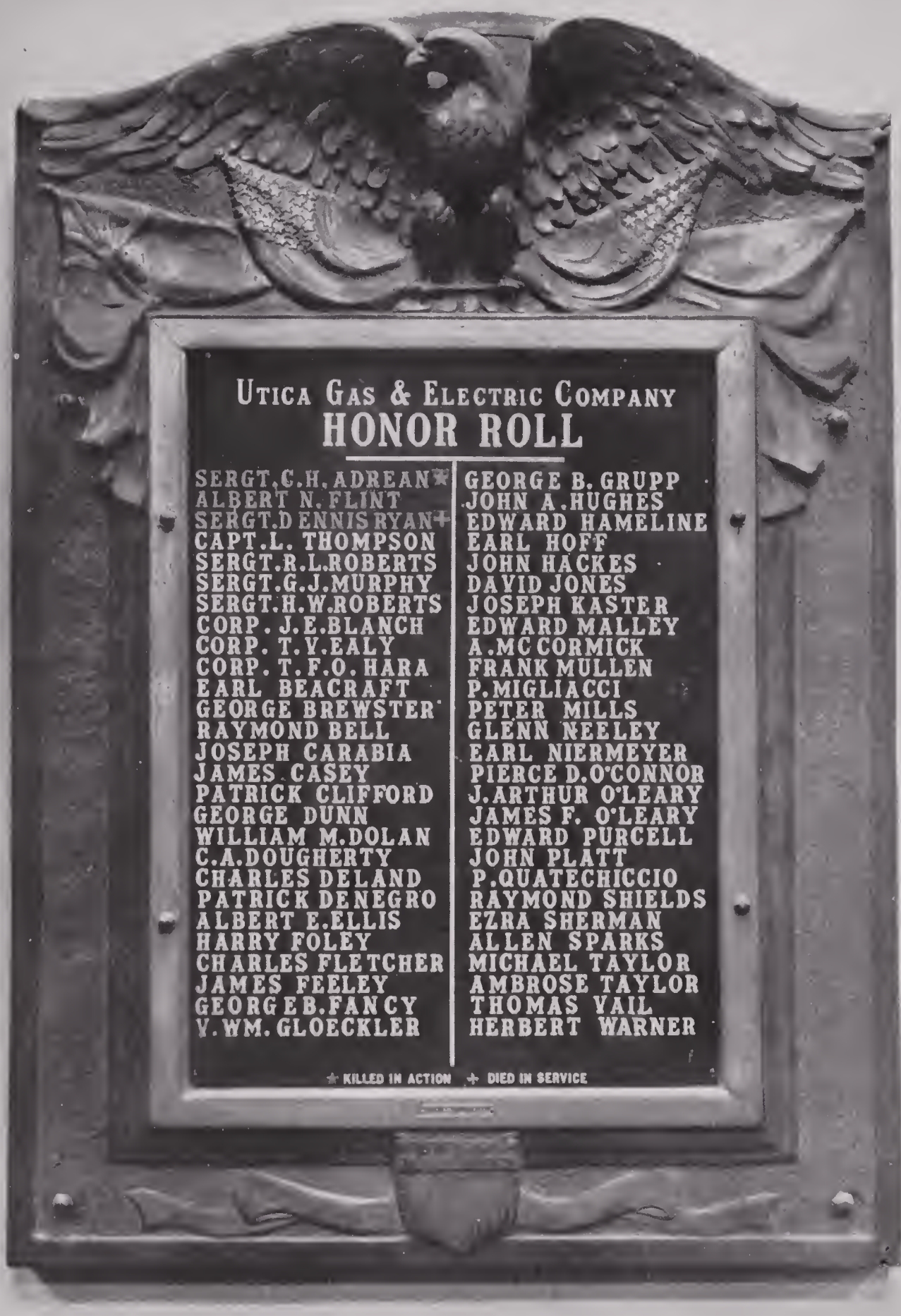
The set was installed at an expense of several thousand dollars. Eventually, the company plans to install similar outfits connecting with its other branches throughout the Mohawk Valley.

The average radio wave length is 360 meters. The frequency of the "wired wireless" is around 20,000 meters, thus eliminating interference from radio broadcasting stations.

The "wired wireless" apparatus looks very much like a radio outfit with its vacuum tubes, detectors, amplifiers, storage battery, coils, etc. A device, very similar to a telegraph sounding instrument, plays an important part in the set. Then, the telephone instrument, which looks just like an ordinary telephone, completes the outfit, which has the appearance of a combined radio, telegraph and telephone set.

For a year and a half the General Electric Company experimented on this invention. It was only perfected recently and the first set built by the manufacturers is the one in operation between the two stations of the Utica Gas & Electric Company. Its installation is the first of its kind in this country and its success will be watched with interest by large commercial and industrial organizations who can adapt it to their business.

Through installing the carrier-current telephone system the Utica Gas & Electric Company has once more evidenced that it is the fixed policy of the company to keep its equipment up to the highest standard and that it is willing to test every new method which will prove of value in producing the highest quality of power.



"Lest We Forget"

Dollars and Sense

"FROM the investor's standpoint securities of public utility companies should be the most desirable of all corporation securities. They should be the most desirable primarily by reason of the absolutely essential service given by the companies issuing them," writes Mr. Edward B. Lee, under the title of "Public Utility Seeurities from the Standpoint of the Investor," in the December 30, 1922, issue of the Investment News.

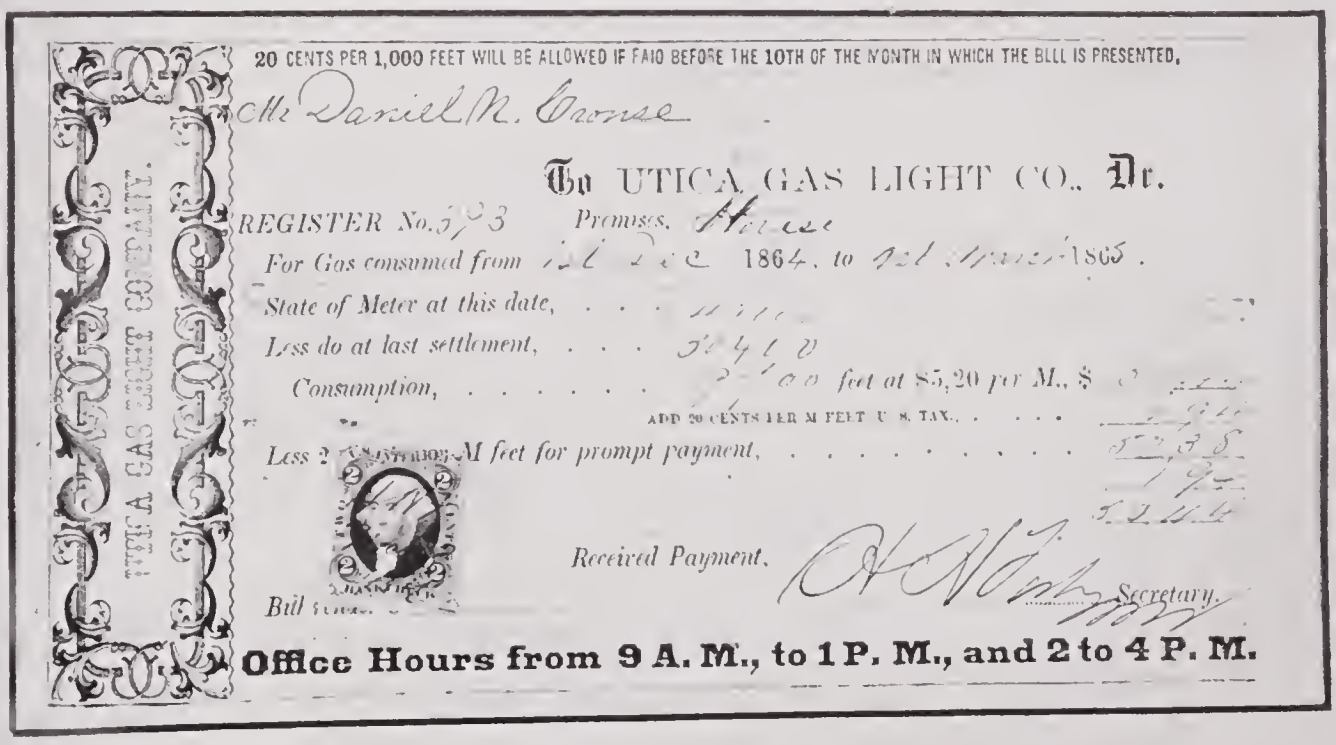
"It has been well said," continues Mr. Lee, "that every phase of human existence comes into contact with public utilities. They are so absolutely essential that it is diffieult to imagine how the world could now get along should it be deprived of them. If people generally fail to realize how vitally important public utilities are it is because the serviees of public utilities have become commonplaee, so energetically, systematieally and intelligently have the services been developed and made available for universal use.

"Beeause of their essential character the public utilities are supervised by governmental bodies, whose funetion it is to see that the companies give the best possible serviee at rates assuring reasonable returns on property values. This factor adds materially to the strength and desirability of the securities as investments. * * *

"These industries are now not only among the most essential, but among the largest of all industries in the United States. The electric power and light industry alone has an investment of probably $5,000,000,000, the electric railway industry an investment of at least $5,000,000,000, the gas industry an investment of approximately $3,000,000,000, and the telephone and telegraph industries a combined investment of about $3,000,000,000, making a total investment of approximately $16,000,000,000 for the four industries. * *

"The greatest progress in all of these industries, with the exception of that of the telegraph, has been made during the last two decades. For example, the electric power and light industry in 1902, according to the United States Census, had an investment of only about $628,000,000, as contrasted with its present investment of approximately $5,000,000,000. The gross earnings of the eleetric power and light eompanies in 1902 aggregated approximately $86,000,000, as contrasted with

Reproduction of a gas bill rendered in 1865. The reader will note that the rate at that time was $5.20 per thousand cubic feet of gas. Since then, organization, invention and better business methods have wronght a great change


20 CENTS PER 1,000 FEET WILL BE ALLOWED IF PAID BEFORE THE 10TH OF THE MONTH IN WHICH THE BILL IS PRESENTED.

Mr Daniel M. Boone

To UTICA GAS LIGHT CO., Dr.

REGISTER No. 3,923 Premises, House

For Gas consumed from 21 Dec 1864, to 21 March 1865.

State of Meter at this date, . . . 11116

Less do at last settlement, . . . 3410

Consumption, ... 7700 feet at $5.20 per M., $ 40.04

ADD 20 CENTS PER M FEET U. S. TAX, ... 1.54

Less 2 per cent. on M feet for prompt payment, ... 83.58

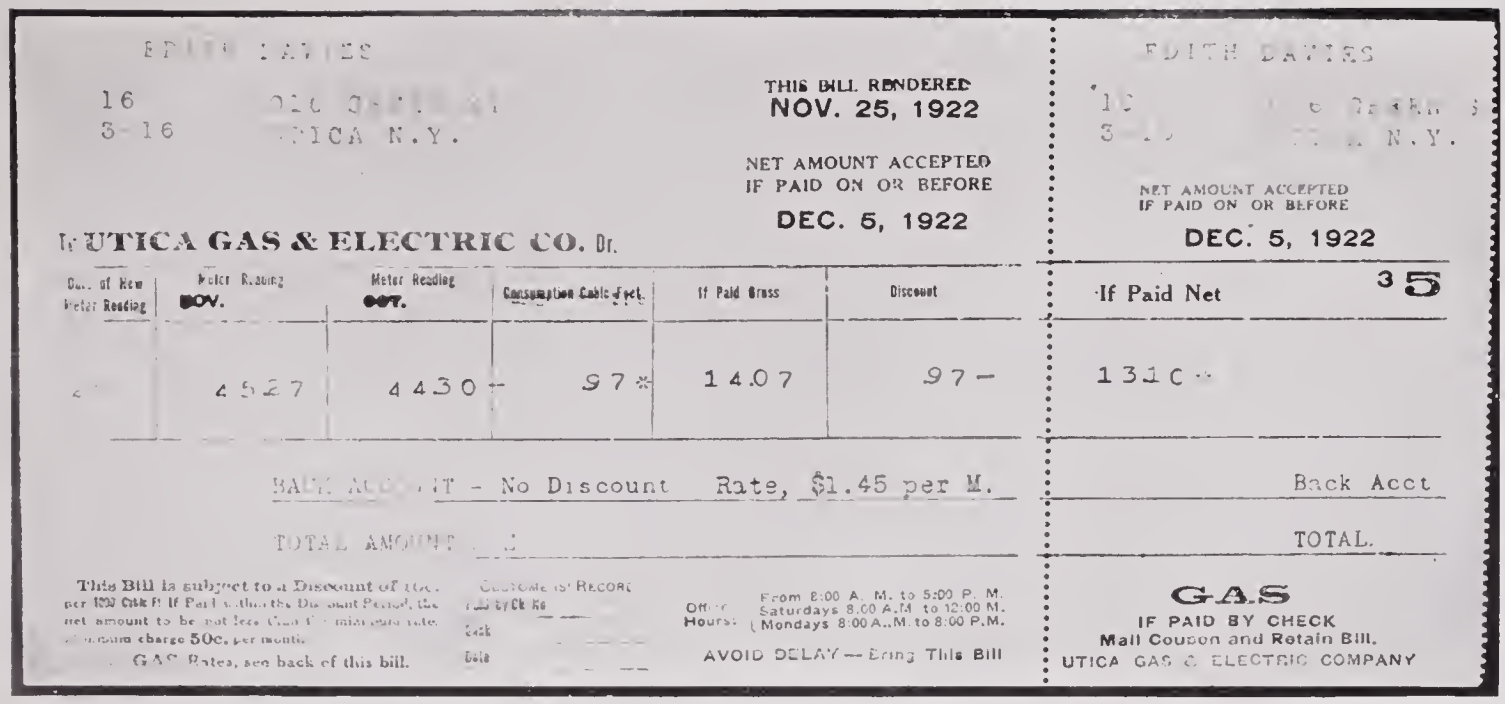
1.92

41.08

Received Payment, O. H. Wells Secretary.

Office Hours from 9 A. M., to 1 P. M., and 2 to 4 P. M.

UTICA GAS LIGHT COMPANY.



EDITH DAVIES
16 [illegible]
3-16 UTICA N.Y.

THIS BILL RENDERED
NOV. 25, 1922

NET AMOUNT ACCEPTED
IF PAID ON OR BEFORE
DEC. 5, 1922

UTICA GAS & ELECTRIC CO. Dr.

Date of New Meter Reading	Meter Reading NOV.	Meter Reading OCT.	Consumption Cubic Feet	If Paid Gross	Discount
[illegible]	4527	4430	97*	14.07	97

BACK ACCOUNT - No Discount Rate, $1.45 per M.

TOTAL AMOUNT [illegible]

This Bill is subject to a Discount of 10c. per 1000 Cubic Ft. If Paid within the Discount Period, the net amount to be not less than the minimum rate, a minimum charge 50c. per month.

GAS Rates, see back of this bill.

CUSTOMER'S RECORD
Paid by Ck No
Back
Date

Office Hours: From 8:00 A. M. to 5:00 P. M. Saturdays 8:00 A.M. to 12:00 M. Mondays 8:00 A.M. to 8:00 P.M.

AVOID DELAY — Bring This Bill

EDITH DAVIES
16 [illegible]
3-16 UTICA N.Y.

NET AMOUNT ACCEPTED
IF PAID ON OR BEFORE
DEC. 5, 1922

If Paid Net 35

1310

Back Acct

TOTAL.

GAS
IF PAID BY CHECK
Mail Coupon and Retain Bill.
UTICA GAS & ELECTRIC COMPANY

This facsimile is of a bill rendered November 25, 1922. Note that the rate at this time was $1.45 per thousand cubic feet of gas. This saving, in terms the consumer can appreciate, is approximately 350 per cent and has been passed on to him

present annual gross earnings of approximately $1,000,000,000. In 1902 the output of the electric generating stations was about 2,508,000,000 kilowatt hours, as compared with an output of about 45,000,000,000 kilowatt hours during 1922.

"The marvelous expansion that has taken place during the last twenty years in the electric power and light industry (practically doubling itself every five years) has been due in part, of course, to the growth in population, but it has been due mostly to the steadily increasing uses to which electric energy has been put by industries of all kinds. Beginning as simply a lighting business the electric generating and distributing industry has been so expanded into a power business that there are indeed few manufacturing, producing and distributing agencies that do not now make use of electrical energy in one way or another. The ability to serve these many industries has been due largely to the development of the high-tension, long-distance transmission systems, making it possible to generate power at the most desirable points and then to send this power anywhere to the point of consumption.

"The great expansion which has taken place in the gas industry, despite the loss from illuminating business, has been due to the many industrial uses found for gas. * * *

"The increase in the number of investors in public utility securities has received its greatest impetus, however, through the customer-ownership campaigns that have been conducted by the utilities in many sections of the country. It may well be said that through these campaigns many of the utilities have become publicly owned, so widespread has been the distribution of their stock. Among the many examples of the success of the customer-ownership campaign may be cited an electric company operating in one of the largest cities which now has more than 25,000 stockholders, of whom approximately 95 per cent are customers. Another company operating one of the largest electric transmission systems in the country and serving an extensive district has made sales to approximately 20,000 customers and employees. In many cases the preferred stock of public utility companies has been so widely distributed, as a result largely of the customer-ownership campaigns, that the average holdings are under ten shares, and in some cases under five shares, per stockholder.

"Despite the physical and financial handicaps under which they operated during the World War and post-war years, the utility companies for the most part emerged from this period with records of interest and dividend obligations paid in full. There is no instance of any company doing an exclusively electric power and light business having failed to meet its interest obligations during this time, and only a very small number, indeed, that failed to pay their established dividends regularly.

"It is to be noted that after all the trying times the public utilities had experienced and the inability to finance their requirements, except at exorbitant rates of interest, they eventually took the lead from industrials and

beginning with March 1921 and continuing until the present time they have been able to market their securities on a lower average yield basis. During the remarkable market for securities of all kinds that has existed during a large part of the past year, the public utilities have issued a greater number of securities than ever before and have placed these with the public at what may be considered as satisfactory prices. * * *

"By reason of their exceptionally high character the securities of electric power and light companies, taken as a group, naturally head the list of public utility securities, as these are the companies that have had no defaults in the payment of interest and very few curtailments in dividend payments during the last ten years.

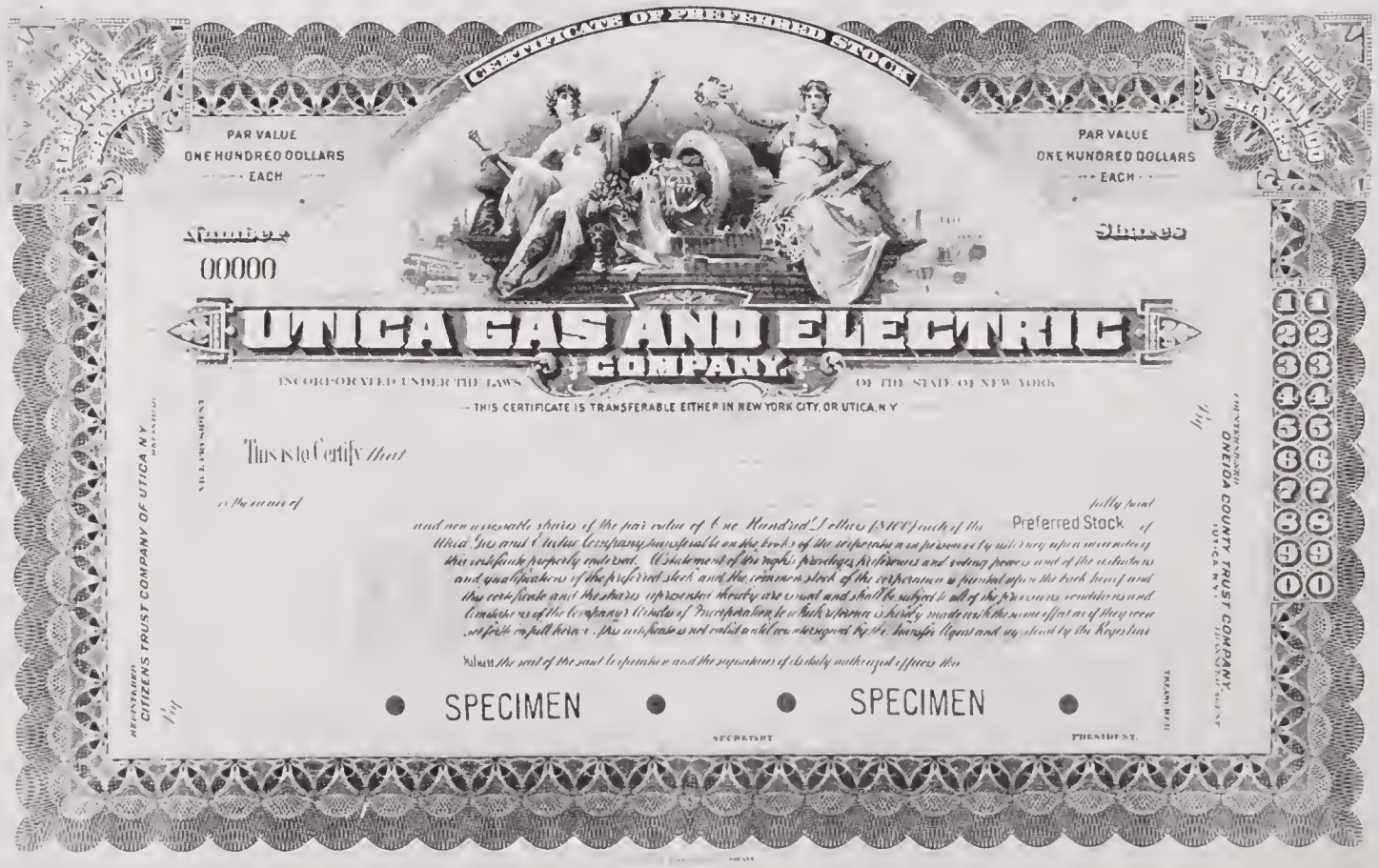
"No other class of corporation securities can make a better showing over the last decade than those of the electric power and light industry. * * *

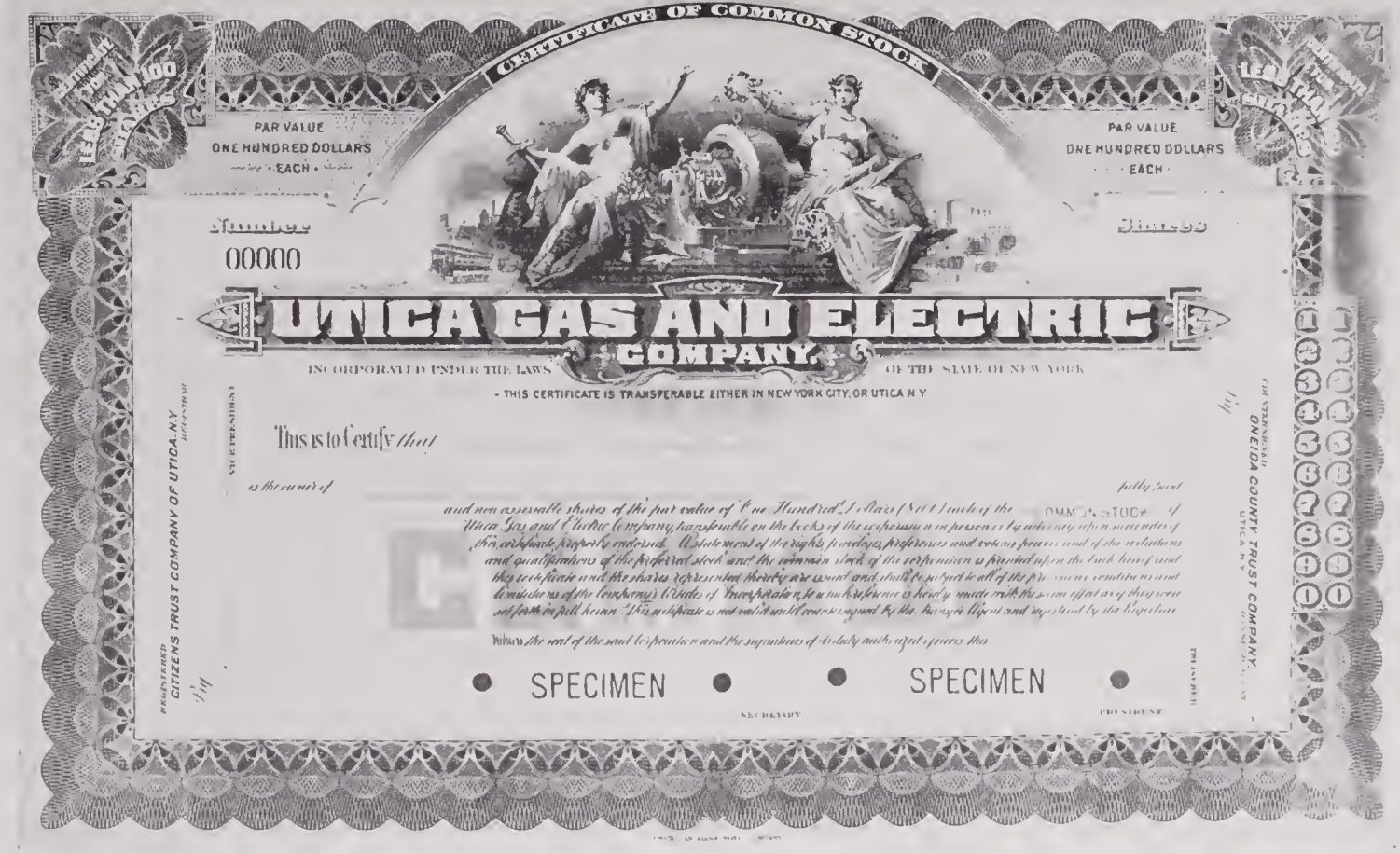
"Although the expansion of the utilities during the relatively short period of their existence has been phenomenal, it must not be thought their growth is nearing an end. They have a much greater future before them. Particularly is this true of the electric power and light industry. Let no one think that the business field of the electric companies has by any means approached the saturation point and that from now on there will be only a plodding development.

"The electric power and light industry has not much more than begun its task of electrifying the country. Many years must necessarily elapse before all homes are electrified and before industries now operating by power other than that generated at central stations are all supplied by the electric companies, and meanwhile a great number of new uses for electrical power will be steadily discovered. The electric industry's greatest development will be in the years to come. This means that many millions of dollars must be annually expended in the building and extension of electric properties and that investors in the years to come will have a far greater number of opportunities for investing in electric power and light company securities.

"Public utilities never occupied so strong a position and their securities never held so high an investment standing as at the present time. More than ever before the public recognizes that utilities are necessary institutions which must receive fair treatment. More than ever before regulating commissions and other governmental bodies realize that their duties are two-fold: they must not only protect the public and see that adequate

Specimen copy of the Preferred Stock Certificate of the Utica Gas & Electric Company





Specimen copy of the Common Stock Certificate of the Utica Gas & Electric Company

service at fair rates is provided, but they must see to it that the utilities are given that necessary financial latitude without which they cannot carry out financial plans essential to the continuous growth of the utilities. More than ever before the public utilities themselves recognize that they have definite duties to perform both for the public they serve and for those who have invested their money in their securities.

"With this increasing realization of rights and of duties on the part of the public, the governmental bodies and the utilities themselves, public utility securities become steadily more desirable from the standpoint of the investor."

This is a clear-cut statement of the value of public utility securities as an investment. It is from a recognized publication of real worth. It is not advertising or publicity, but a logical discussion of an important business subject.

Will you please read the quotations from Mr. Lee's article again, especially the last three paragraphs. We believe if you will do this you will have a better appreciation of the reports which follow than from any discussion of the subject we could write.

Ruth Bailey Steele, who holds the first share of Preferred Stock issued by the Utica Gas & Electric Company

In 1920 the Public Service Commission of New York State gave the Utica Gas & Electric Company permission to issue $1,200,000 of preferred stock, or 12,000 shares at a par value of $100 each. This was the first issue of preferred stock made by the company and a detailed report is given on next page.

The remarkable feature of this report is that only 2,689 shares of this stock are held outside of

the territory served by the company and that these outside shares, if they can be so termed, are held by 385 shareholders. Equally remarkable is the large number of shareholders of this stock, as the average number of shares per holder is only seven.

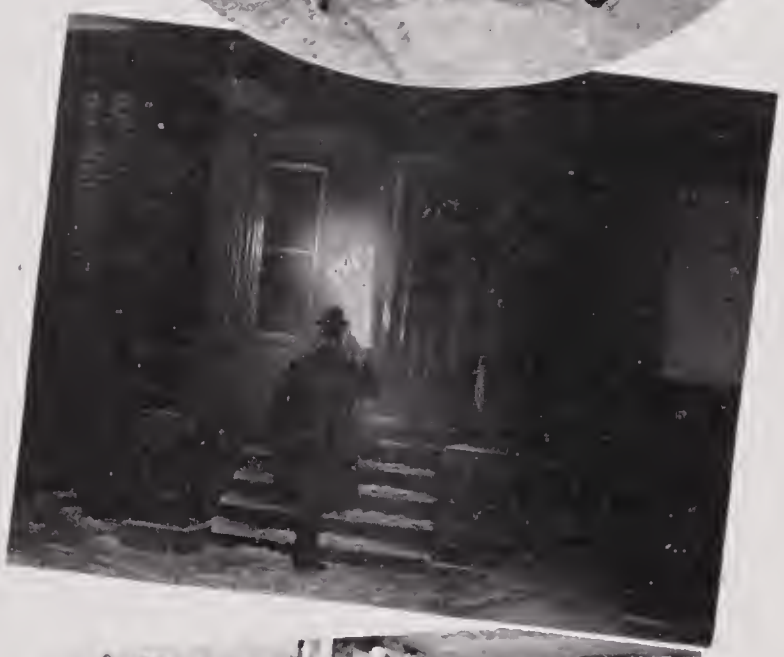
In describing the preferred stock and other securities of public utility corporations of the standing of the Utica Gas & Electric Company the experienced financial writers always call them securities. The term is rightly used, because money invested in these stocks is as secure as it is possible to make it. Another term, correctly used by the financial experts, is investment, and these preferred stocks, backed by the actual physical property of the issuing corporation, form the very best investment.

It is possible that financiers and men of unlimited means can assume the element of risk connected with investments of a speculative nature, but all such men agree that people in the average walks of life, those who have a capital so limited that the loss of several hundred or a few thousand dollars represents the hard-earned savings of a considerable portion of their lives, cannot afford to take any unnecessary risk when placing their surplus funds, but should invest only in such high-calibre stocks and bonds which possess true security values and which will give them the assurance of a reasonable, yet profitable, return on their investment without imperiling it in any way.

The officers of the Utica Gas & Electric Company believe that the preferred stock of this public utility corporation forms such an investment.

Report of the Distribution of the Preferred Stock of the Utica Gas & Electric Company

Total Shares Sold	12,200
Total Number of Shareholders to November 5, 1922	1,686
Average Shares per Stockholder	7
Largest Block Held by One Person	283
Smallest Block Held by One Person	1
No. Shares Held in Utica	5,091
No. Shareholders in Utica	671
No. Shares Held in Other Utica Gas & Electric Company Territory	4,320
No. Shareholders in Other Utica Gas & Electric Company Territory	630
No. Shares Held Outside of Utica Gas & Electric Company Territory	2,689
No. Shareholders Outside of Utica Gas & Electric Company Territory	385
No. of Employees Holding Shares	512
No. of Shares to Employees	1,105
No. of Women Holding Shares	478
No. of Shares Held by Women	4,010
No. of Men Holding Shares	1,023
No. of Shares Held by Men	7,507
Shares Bought Outright	10,100
Shares Bought on Installment Plan	2,100
No. of Shares Sold by Employees	6,286
No. of Shares Sold by Salesmen	1,262
No. of Shares Sold by Banks	183
No. of Shares Sold by Brokers	121
No. of Shares Sold by Office	4,348
No. of Shares Cancelled, Refunded, Resold	423



The call light flashes on the telephone switchboard at the offices of the Utica Gas & Electric Company—there is always an operator on duty day and night, Sundays and holidays, throughout the year—and to the greeting of the operator there comes the reply: "There is always something wrong at our house; the lights in the front rooms are all out." In a few seconds there is heard the whir of an automobile motor in the company's garage and one of the expert service men is on the way. Regardless of the time, night or day, and despite weather conditions, fair or disagreeable, he makes the trip at as great speed as it is safe to use and the laws of the road will allow. Arriving at the place from which the call came, he ascertains the cause of the trouble and in ninety-nine cases out of a hundred is able to have the lights on again in a few minutes. In the majority of cases all that is necessary for the service man to do is to replace a fuse, though he carries an emergency kit which enables him to correct other conditions, if necessary. In less than ten minutes from the time the average trouble telephone call is received at the company's office the lights are on and the customer is saying "goodbye" to the service man. Highest quality power is only maintained through highest quality service. It is this kind of attention and prompt action that has made every user of electric light and electric power an appreciated friend of the Utica Gas & Electric Company

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